

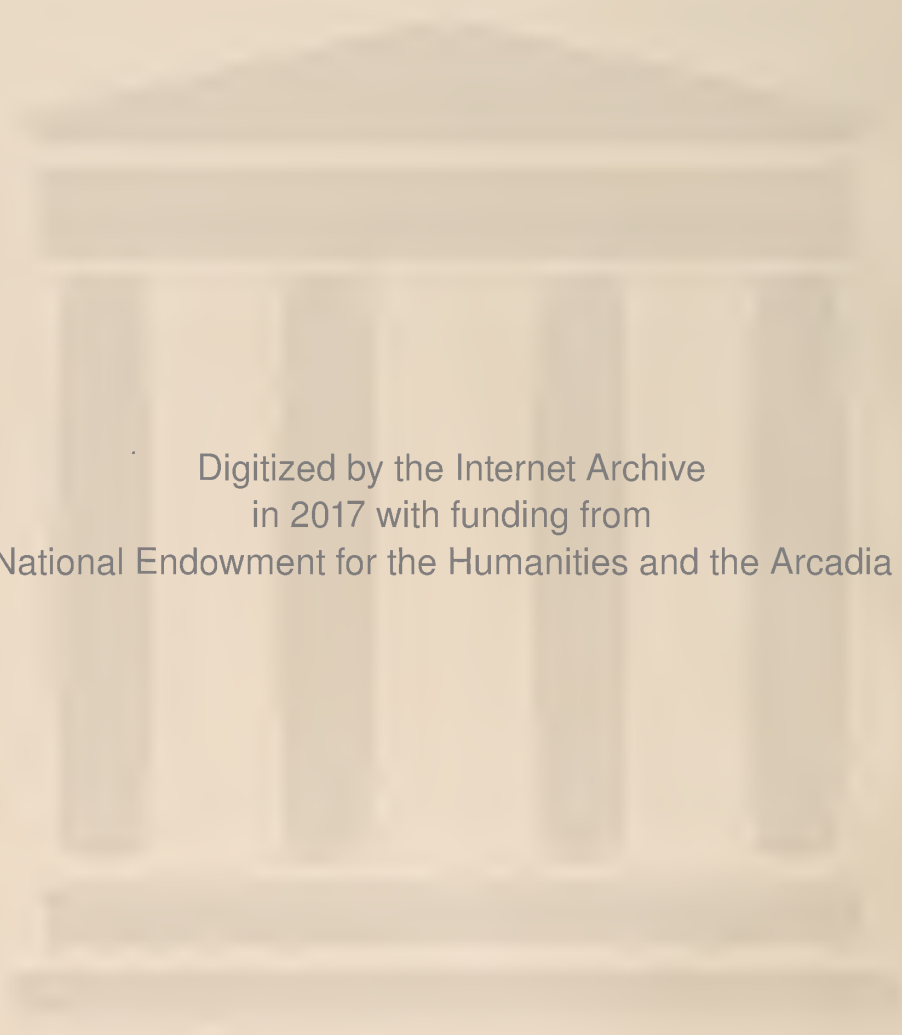
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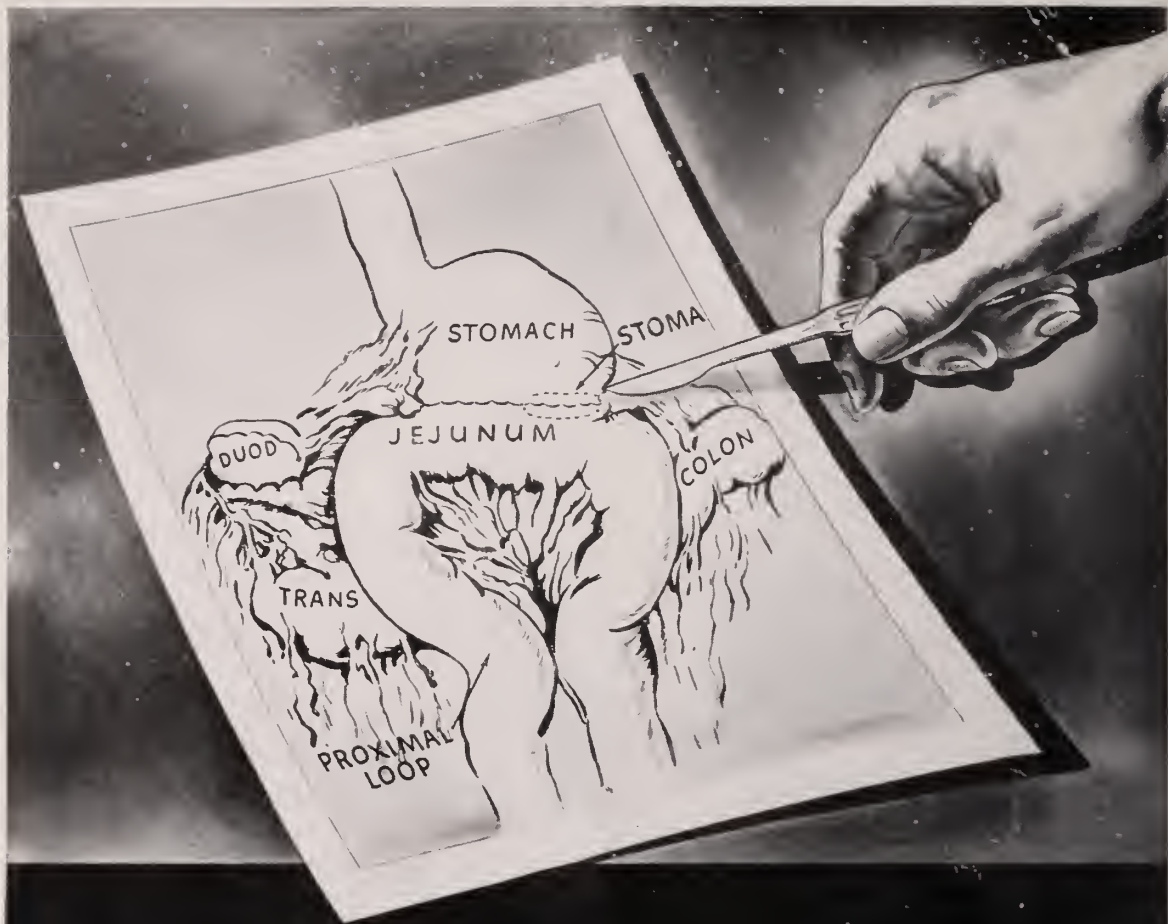
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January, 1944



New, effective treatment for the most baffling Peptic Ulcer

Gastrojejunal ulcer is described as the type most difficult to treat satisfactorily. 1.

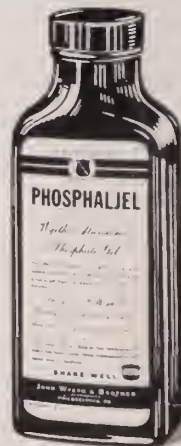
A new preparation, Phosphaljel, is effective in treating these highly resistant lesions. 2.

Phosphaljel is antacid, astringent, demulcent, pleasantly flavored. It is indicated in those cases associated with pancreatic juice deficiency, diarrhea, or low phosphorus diet.

Available in 12-fluidounce bottles. A pharmaceutical of John Wyeth & Brother, Division WYETH Incorporated, Philadelphia.

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PHOSPHALJEL* *Wyeth's** **ALUMINUM PHOSPHATE GEL**
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Guest Editorial

Postwar Planning for Medical Service

PERHAPS the most critical period in the history of the United States as far as medicine is concerned is that which now confronts us. A world intently organized on warfare will in the future become at peace. Then will ensue the demobilization and the return to their homes of millions of men whose lives have been regimented in the military use of that term. Obviously there will be attempts to carry over into civilian life much of the direction and control that marked the lives of all of us in wartime. Nevertheless, true democracy demands a considerable share of responsibility placed on each individual for himself. Destruction of that responsibility leads inevitably to destruction of the democracy under which individualism thrives.

The practice of medicine in the United States has been through the centuries a demonstration of the processes of freedom in human affairs. From the first, the physician has been able to choose those whom he would serve, and the patients have been able to choose those whom they would wish to serve them. There has been no third party—governmental, industrial or financial—interfering with the personal relationship between doctor and patient. With the growth, however, of compulsory sickness insurance systems and state medical programs elsewhere in the world the tendency has been inevitable to translate foreign systems to American shores.

In the meantime, medicine in the United States has been undergoing an evolution in its methods of administration and distribution. The evolution of the administration of medical care in the United States, since 1932, has been proceeding with increasing intensity. In the brief interval of ten years some twelve to fifteen million people have become insured against the cost of hospitalization, and a wide variety of plans have been adopted and are under investigation for extending medical service to people in the low income groups. Some may argue that ten years' delay was unnecessary and that even now the time is right to scrap our evolutionary process in favor of complete revolution in the administration of medical care. They would urge the establishment of a single governmental agency to be charged with the collection of funds from all of the people of the United States and the redistribution of those funds in the form of medical service. They are much more concerned with the administration of medical care than with the ministrations of the sick.

The plans now widespread throughout the United States may be classified into definite categories. First, are the Blue Cross hospital plans, some of which already include as an integral part prepayment for medical care, including surgery and obstetrics; others of which are coincidental to or cooperative with medical and surgical care plans.

Second, are plans administered by large industries such as those of Mr. Kaiser in California and those of Endicott-Johnson, Sears Roebuck, Western Electric, National Cash Register and General Motors, which may be further subdivided into self-insurers and those who are insured by well established insurance companies or with mutual plans developed by state and county medical societies. Third, are the insurance prepayment plans developed by community groups through sick benefit associations, fraternal orders and similar agencies. Fourth, are the innumerable technics developed by farm groups with and without cooperation of government agencies. In some instances the medical care is administered by a physician who is the free choice of the patient; in other instances by an individual physician or groups of physicians specifically associated with the industry or insurance company, and in still other instances by groups of physicians who contract with the various industries or similar groups.

Obviously, the extent to which such plans fulfil the needs of the people they serve varies. The time has certainly not been sufficient to warrant any person in saying this, that or any other plan is ideal for the nation as a whole or even for the group it now serves. Many of these plans have themselves undergone continuous evolution from the day on which they were first established.

In its consideration of various plans for providing people with medical care, the American Medical Association, through its House of Delegates which speaks for the organization in matters of policy, has recommended that the quality of medical service is paramount and that all of the conditions associated with the administration of medical service must be examined with relation to their effect on the quality and sufficiency of such service. An attempt must be made to prevent the selfish encroachment of politics, either within or without the medical profession; the selfish encroachment of industry which believes the price of the service is above the quality and extent of the service; above the encroachment of public health workers, social workers, economists or other administrative specialists who would rather see the system running than concern themselves with the effects of the system on the health and the life, and the philosophy, and the happiness, and the future of the people who are handled by the medical machine.

Intelligent planning is the mark of intelligent men. Unbiased, honest consideration and evaluation of the experiments now going on will yield more and more information as to the criteria which should govern the ideal form of medical service for various areas and various communities. Considerations by governmental and other bodies in various countries are gradually leading to conclusions much like those that have here been ventured. There are areas in which only full-time salaried physicians can be available to provide medical care; there are other areas in which a multiplicity of competent practitioners and specialists makes possible free choice of doctor and hospital and the inclusion in the service of all medical equipment; there are still other areas in which group medical practice under conditions which force the group to function under the ethical principles and ideals that make this form of practice desirable may be the best answer to the problem.

The question has not been abandoned by the physicians of this country. They have not been too conservative in their approach to these problems. They have merely applied the same scientific study that would be applied to any serious problem in the research laboratory or the hospital.

Research under our present system has thrived in America far more than in any other country of the world. Today each of our great pharmaceutical industries and the

majority of our smaller ones have departments devoted to research. Our great universities and our research institutes surpass in medicine what is available anywhere else in the world. By restrictive taxation, by peculiar rulings of courts or by unfortunate legislative procedures such research may be congealed into ineptitude. Research under governmental auspices as now carried on in national institutes of health and in the agencies under Army and Navy control represent a considerable contribution, but limitation of research to such agencies would be devastating to progress. Competition in research is a stimulating factor whose importance cannot be doubted.

The standards of living of the people of the United States are generally recognized as the best in the world. Granting a shortage of the benefits of this standard of living for many of our population, the problem concerned is not how to give less to all but rather how to give more to all. Apparently many of the deficiencies in distribution of medical service result from improvidence of persons in the low income groups and from careless evaluation of what is most necessary for life and the pursuit of happiness. The tendency to place the responsibility upon the worker and to limit that responsibility to local rather than federal control may well be fundamental in the maintenance of the American system of government. Doctors everywhere recognize that food, fuel, clothing and shelter are even more important in the prevention of disease than immunization and periodical physical examination. An attempt to build security against sickness by providing more care after the patient becomes ill rather than by overcoming the factors that lead to sickness is illogical and unscientific. This, nevertheless, is the actual proposal of many of the plans that have come from the planners.

MORRIS FISHBEIN, M.D.

EDITOR'S NOTE. Dr. Fishbein is well known to our readers as editor of the Journal of the American Medical Association and of Hygeia, the Health Magazine.

Floral Eponym (11)

BALDWINIA UNIFLORA-NUTTALL

WILLIAM BALDWIN (1779-1819) the son of a Quaker preacher was born in Chester County, Pennsylvania, March 27, 1779. He took a course of medical lectures in 1802, but when the lack of funds prevented his completing the course, he returned to Downingtown and there he became acquainted with Dr. Moses Marshall and Dr. Benjamin Smith Barton who made an enthusiastic botanist of him. Later, on account of his health, he sailed as ship's surgeon on a vessel bound for Canton. When he returned in 1806 he had enough money to complete his medical studies. He graduated in medicine from the University of Pennsylvania in 1807, and settled in Wilmington, Delaware. In 1811 he had to leave Wilmington on account of tuberculosis. He went to Georgia where he led an open air life studying the local flora. In 1812 Baldwin was requisitioned as a naval surgeon, serving at St. Mary's, Georgia. In 1816-17 he went on the frigate Constitution to South America to investigate the condition among the Spanish colonies and the "vegetable products". He died the following year while on an expedition with Major Long up the Missouri River.

Baldwinia uniflora is found on the borders of swamps from Virginia southward.

MEDICAL ASPECTS OF AIRCRAFT CARRIER WARFARE*

J. Q. OWSLEY, CAPTAIN, MEDICAL CORPS, U. S. NAVY,
United States Naval Academy,
Annapolis, Maryland.

It was Anacharsis in the year 000 B.C. who said, "There are three sorts of people: Those who are alive, those who are dead and those who are at sea". Today, this last category assumes far greater importance than it has at any time in the history of the world. With our many far flung battle fronts enormous numbers of men must first get there to fight and to do so they must go to sea. A great part of this responsibility falls upon the Navy, which must see that they get there, and get there safely. To do this the Navy must fight the enemy on the sea and in the air as well as on the land. To even attempt to describe the many phases of our task today is naturally quite impossible, even if I were qualified to do so.

By now this war has reached into every state, every city, and into every home. Some of you are already in the service and doubtless others will go before long. As medical men you are interested in knowing what those who are already in the service are doing. For my part I should like to tell you a few things that we in the Navy Medical Corps are doing to perform our mission of keeping as many men at as many guns as many days as possible.

But to do so, let me go back a few years. In 1775 John Paul Jones hoisted his Star and Rattlesnake flag to the masthead of the U. S. S. Alfred. On board this ship, to fight the British in the Atlantic, sailed the first American Naval Surgeon, Dr. Joseph Harrison. It was not until August 31, 1842, however, that the Bureau of Medicine and Surgery was established. With this beginning, the Medical Corps has expanded down through the years until today approximately 10,000 American doctors are now serving the Navy in every part of the globe. At the outbreak of hostilities in Europe there were less than 900 Medical Officers in the regular Navy, but foresight and planning begun shortly after the close of the first world war, paid off when we were called upon to meet the medical needs of our now rapidly expanding Navy. This was accomplished through the organization of the Naval Reserve Medical Corps, in which thousands of physicians in civil

practice, throughout the country, were given commissions. It might seem that, measured in terms of ships, this is a lot of Medical Officers, but when one considers the number of hospitals and other activities at home as well as abroad, that have to be manned, even this number is not sufficient. In fact, today, the Navy is in urgent need of more Medical Officers to supply future demands of an adequate fleet to win this war.

Time will not permit me to relate to you all of the various duties our doctors in the Navy are performing today. Instead I should like to tell you of the doctor in a new and different kind of warfare never seen before, where aircraft carriers stand toe to toe, as it were, and slug it out with enemy aircraft carriers without ever seeing each other. Oft-times these carrier duels occur from 100 to 200 miles apart, yet they are deadly, and are never over until one or the other is sunk, or retires to lick its wounds. A short time ago I returned home after serving approximately 15 months on one of these large combatant carriers fighting the Japanese in the Pacific.

I am getting ahead of my story, so, once again, let me go back for some additional Naval aviation history and tell you of some of the experiences which were interesting to me. I hope they will be to you. It was in 1911 that the Navy first sprouted wings. On January 18 of that year Eugene Ely took off from San Francisco, California, in one of the few airplanes existent in those early days, and successfully landed on a temporary platform 125 feet long and 30 feet wide, built over the stern of the Battleship Pennsylvania. When he took off again, to land ashore, he had successfully completed the first landing and take off on a ship. Little came of this until after the last war. In 1921 the Navy again became interested and over-decked the Collier Jupiter from stem to stern and renamed her the Langley. She became our first aircraft carrier. On October 26, 1922, the first landings and take off were successfully completed. It was on this ship that nearly all of our senior aviators, many of whom are now commanding our carriers, cut their teeth—some of them literally. In fact, it may be said that this famous ship was the mother of our Naval avia-

*Address delivered by invitation at the annual meeting of the Medical Society of Virginia at Roanoke, October 25-27, 1943.

tion. In the spring of 1928 the U. S. S. Saratoga, into which had been built all of the things that had been learned by trial and error on board the Langley, stood out to sea to become our first modern aircraft carrier.

In 1926, in New York City, I reported for duty aboard the U. S. S. Pennsylvania, of which I have previously spoken. The platform on which Ely had landed had long since been removed, her name had been changed to the U. S. S. Pittsburgh and she was now headed for China. On arrival at Manila I joined another ship, the U. S. S. Canopus, which incidentally was sunk at Bataan in the early part of this war. Shortly after I reported on board we proceeded to Shanghai. It was here that I had my first glimpse of the Japanese Navy. Lying at anchor off the Bund were a number of low, black, business-like, men-of-war, flying the Jap flag. Were these the vessels that turned over when they were launched? Could these ships be a part of the Navy that we could lick in three weeks? I wondered.

Several weeks later we were in the harbor of Tsingtao. This Chinese city, in the province of Shantung, lay around the corner from Peking. It so happened that at this time the armies of southern China were engaged in a civil war with the armies of northern China and were steadily pushing the latter army north in Shantung province. Suddenly one morning several Japanese men-of-war appeared off shore and landed a large number of troops to protect their interests in this province and to keep the forces of both armies out of the city. Japanese troops were everywhere and here for the first time I had a good look at our future enemy. They meant business and they looked the part. I wondered then if they would be a pushover if we should ever meet them in battle. If I had any such idea then I have long since changed my opinion.

In the summer of 1933 I joined the U. S. S. Saratoga. This was my first duty on an aircraft carrier and my first intimate association with Naval Aviation. It was to be an interesting and exciting two years. I shall never forget my first morning on the flight deck to watch the planes take off and land. We had put to sea, and suddenly it seemed, high in the sky there appeared dozens of planes flying in formation. This was her air group, composed of fighters, scouts, dive bombers and torpedo planes. As I watched, the ship changed course, and picking

up speed turned into the wind, for planes must take off and land directly into the wind. While this was taking place the formations of planes were breaking up preparatory to landing on board. The first plane now was approaching the flight deck from the stern, and with the aid of signals given by the landing officer, dropped neatly on the deck while making from 60 to 70 miles an hour and with the aid of the arresting gear, came to a sudden stop within a few feet.

But a word about the ship. Although she displaced 33 thousand tons she could make approximately 40 miles an hour through the water. In peace time she had a complement of about 2,000 officers and men. There were five doctors and two dentists on board. Of the doctors, one was a general surgeon, one an eye, ear, nose, and throat specialist, another an internist. Two flight surgeons rounded out the group. The hospital spaces, called the sick bay aboard ship, were quite large. There was a well equipped operating room, a ward capable of caring for many patients, an isolation ward for contagious diseases, a well stocked pharmacy, a laboratory, a special examining room and a dressing room. There were also offices for the medical officers as well as one where records and files were kept. This indeed was an adequate hospital in every respect. In view of the intense amount of activity which goes on aboard one of these ships, it is not surprising that we were kept fairly busy with one thing or another.

I listened to many discussion on the subject of what life on a carrier in time of war would be. It was said that she would be extremely vulnerable because armor must be sacrificed for speed. Also the thousands of gallons of high octane gasoline, large numbers of bombs and torpedoes carried for the planes, as well as the ships own ammunition, would make her a veritable floating powder keg. It was not pleasant to think of what a well placed enemy bomb or shell might do. It wasn't until years later that I was to find out.

Once again in 1939 I went to sea in an aircraft carrier. This time it was in the U. S. S. Langley of which I have previously spoken as being the first of her kind. Two years later I left her in Manila. The outbreak of the war found her in the Java Sea where she was to go down fighting under a heavy Japanese dive bombing attack, ending her long and

glorious career. Thus having had two previous cruises on this particular type of ship. I was not surprised when in the early Spring of 1942, I was again ordered to a carrier.

Out of this present conflict a new kind of sea warfare has sprung. One is accustomed to think of sea battles as a line of battleships, steaming along, firing at the ships of the enemy in a similar line. Now the carrier task forces had come into being. One or more carriers surrounded by a protecting force of swift moving battleships, cruisers, and destroyers, move out to meet the enemy. When two task forces of this type meet, it is usually only the pilots of the planes who contact the opposing surface ships. The ships themselves are usually too far apart to be visible to each other. It was this type of battle in which our task forces met those of the Japanese in the Coral Sea, at Midway, at Santa Cruz and in the Solomons. Task forces of this type have also been used to raid several Japanese held islands in the Pacific and even Tokyo itself.

Each battle fought represents long hours, days, yes, even years of preparation. To do this every department of the ship's organization, the gunnery department, the medical department and so on, must see that nothing is left undone to fight at a moment's notice. Let us take a look at what the medical department must do for instance. What if a bomb or torpedo should wreck the sick bay. This must be anticipated. Therefore, a number of dressing stations and satellite first aid stations are set up throughout the ship. These are well equipped to take care of casualties within its area. Emergency operating rooms, with sterile supplies and instruments, must be ready to handle surgical cases on short notice. An adequate number of units of plasma must be available throughout the ship. Stretchers for handling the wounded must be plentiful and of several types. We have found the Stokes stretcher, which is manufactured of reinforced wire mesh, to be most satisfactory on board ship. In this, a patient can be lashed in and carried up and down ladders, lowered from the super-structure or even transferred from one ship to another by means of lines and pulleys. Another valuable type is made of heavy canvas with a long zipper up the front and fits much like a suit. This type, with the aid of a rope attached to the upper end, can be used to pull patients up through small hatches from below decks.

Fresh water must be stored at dressing stations for the injured. Anesthetics, tanks of oxygen, morphine, agents for the treatment of burns, and all types of splints must be provided and well dispersed. Dozens of first aid boxes must be equipped and scattered the length and breadth as well as from the top to the bottom of the ship. Large portable metal lockers containing medical supplies which can be transported from compartment to compartment must be available should dressing stations be destroyed. Last, but not least, there is the medical department personnel which has to be at the peak of efficiency. All doctors, dentists, and hospital corpsmen must be thoroughly familiar with all forms of first aid, infusion of plasma and proper methods of transporting the injured. Bandsmen were trained to act as stretcher bearers and administer first aid. Even the chaplain came in for his share of instruction. Long hours were spent in drawing up plans for evacuation of the injured from bombed and burning areas as well as procedures for getting them off the ship should we have to abandon her.

But let me give you a brief picture of what life is like on board a fighting ship in time of war. In the Pacific the days are hot and humid. No relief is obtained at night as the ship must be buttoned up tight at sunset so that no telltale light can give away our presence to the enemy lurking in the dark. As a result one literally stews in his own sweat most of the time. Prickly heat and skin diseases only add to the discomfort. Fresh water, though usually ample, must be conserved, and bathing at times is somewhat restricted. Food for the most part is excellent and of sufficient quantity, except that after long weeks and even months at sea, dried and canned foods must be resorted to. Alerts are frequent. Many times in the middle of the night we were almost thrown from our bunks when the ship turned sharply to avoid a submarine or torpedo. The under water explosions of depth charges shook the ship and became familiar occurrences to us. Sometimes we would go up on deck to watch planes and destroyers drop their messengers of death on some nearby submarine or perhaps to see our fighters shoot down an enemy patrol plane which had ventured too close. On these occasions word was usually passed so that as many as were able could watch the fun.

The questions most frequently asked of anyone

who has been in actual combat are "What is it like?" and "How do you feel?". Certainly whole volumes could be written on each of these questions. However, I should like to tell you, in as few words as possible, some of the things that I saw and felt in one of these battles at sea between one of our aircraft task forces and one of the Japanese.

We were at sea when we received reports that the enemy had been sighted in the area. Immediately our search planes were made ready to take off, for the advantage is on the side of the force which locates the enemy without its own forces being discovered. If we could hit their carriers while the planes were still on deck, or even taking off, their air striking force might be completely, or at least partially, destroyed and our chances of getting hit, greatly reduced. While our own planes were taking off a large enemy patrol plane was sighted. A fighter shot it down. We saw it hit the water and burn. There was little comfort in this for us as he had already given our position to his own forces by radio.

We were now at general quarters but I took a last look around to see that the medical department was ready in all respects. While doing this I could hear the remainder of our planes taking off. This meant the enemy had been located and our planes with their bombs and torpedoes were on their way. I had hardly more than returned to my own station when suddenly a boatswain's whistle sounded over the loud speaker system. There were a few seconds of silence. Then a voice said "Now hear this. There is a large group of enemy planes headed for the ship. All hands put on steel helmets". The next few minutes were the longest I ever spent. Down below, unable to see what was going on, I did a lot of thinking, and watching the reactions of the men about me. I knew that, even though there were other ships around us, the carrier is the prize and must be destroyed first, for in doing so the air coverage of the entire force is lost. This meant of course the planes would concentrate on us first, and if there were upwards of a hundred planes, it was only a question of how many times we would get hit. I wondered how they would feel and where they would hit. I looked at the faces about me. They were tense and anxious but I saw no outward signs of fear or excitement. Some were quiet, others talked to keep up their spirits. A few tried to read. I saw

some bibles. I am sure that many prayed.

We were suddenly jarred out of whatever thoughts we had by a booming voice over the loud speaker. "All hands stand by to repel air attack". Then a minute or two and, Wham! The whole ship shook. A large anti-aircraft gun had opened up. Another and another answered. Then the rapid fire guns joined in. Now they were all firing at once. The noise was terrific. The ship, running at high speed, twisting and turning to dodge bombs and torpedoes, laid so far over on her side in the high speed turns that I thought she would turn over. Then came a new sensation, a feeling that the ship was being lifted out of the water. She would hardly settle back again before it would be repeated over and over again. These were "near misses" hitting alongside or near the ship. Such a shaking and jarring I had never experienced before. It was almost impossible to stand up, so we sat or lay on the deck. I looked from face to face. No word was being spoken now. To have been outside where you could see the bomb that was going to get you would have been much better than down below waiting for the next one to hit and wondering whose name was on it. Direct bomb hits on a ship are sometimes difficult to feel due to so much other noise and the motion of the ship. I was not sure that we had been hit until one hit so close it removed all doubt for it turned out to be not over thirty feet away. We felt there must be casualties, so grabbing a first aid pouch we were on our way. There was no time now to wonder where the next bomb would fall.

The first casualty I saw was a young seaman with his leg blown off. While he was being taken care of others were coming in. Stretcher bearers were rushing here and there. Even injured men helped other injured men. I saw one corpsman with his eye destroyed and his face bloody giving first aid. There was no panic, no hysterics, no crying out. Injured men lay quiet. Their most frequent request was for a drink of water or a cigarette. Many asked that their shipmate be taken care of first or that they be allowed to get back in the fight.

Most cases received $\frac{1}{2}$ grain of morphine by syrette. Wounds were frosted with sulfonamide powder. Bleeding was controlled with sterile dressings and pressure bandages. Tourniquets were

rarely required or used. Burns constituted a large percentage of our cases. These were also treated with sulfonamide powder either in ointment, emulsion or in the dry form. Plasma was freely given, often under difficult circumstances, and saved many lives.

The guns had now ceased their firing. The last Jap plane had been shot down, but we were not yet out of danger. There were fires to be controlled and damage to be repaired. The ship was filled with a mixture of odors of bombs, of smoke from the fires, and the smell of blood. Bodies had to be removed to secluded areas. The injured had to be collected and evacuated from the dressing stations to the sick bay. A bomb exploding beside the ship had flooded the fresh water tanks with sea water. Fresh water collected in emergency tanks at battle dressing stations was rationed and canned fruit juices were issued until repairs could be made. The main operating room was found to be out of commission so an emergency operating room was established until the other could be restored.

Meanwhile the ship was being searched for additional dead and injured. When this had been completed a careful survey of all patients was made and selected cases prepared for operation. Burns and minor injuries were redressed. All wounded personnel were given one-half c.c. of tetanus toxoid. Most of them received sulfonamide by mouth.

There were several other types of casualties with which we had to contend that I have failed to mention. Of these, the blast injuries were the most puzzling. Some of these cases, found dead, showed no external evidence of injury. Others, still living, failed to respond and died within a short period. Smoke inhalation by men trapped in burning areas caused us considerable concern. Wounds, caused by tracer bullets coated with phosphorus, produced considerable damage to surrounding tissues.

In view of the fact that we were at sea, it was several days before we were able to transfer our casualties to a Mobile Hospital located on an island in the Pacific. By this time all cases were in good shape. All repair work had been completed. Casts had been applied. Infections had been few, and thanks to plasma and sulfa drugs, our mortality had been low.

We buried our dead at sea. Every effort was taken to correctly identify the remains of each man before they were enclosed in canvas and weighted. Full military honors were accorded each body. Funeral services conducted by the chaplain in the presence of officers and crew made a profound impression on us all. I watched many faces as the bodies of our shipmates were committed to the sea, and saw their eyes narrow and their jaws set firm. In that great silence I knew what they were thinking.

Russian War Relief.

The Board of Directors of Russian War Relief has adopted a 21 million dollar relief program for 1944, which will continue to be administered in a manner to promote good Soviet-American relations.

Medical supplies and clothing will comprise the bulk of purchased goods. Gifts in kind for which collections will continue on a nationwide basis in-

clude used clothing, vegetable seed, watches, medical textbooks and instruments. A new campaign will be launched soon for a minimum of 3,000,000 family utility kits. Manufacture of new clothing by volunteer sewing and knitting groups will continue.

Russian War Relief sends no money out of the country. All its relief goods are transported in Russian ships by the Soviet government.

THE MECHANISM OF ESOPHAGEAL VOICE FOLLOWING LARYNGECTOMY*

E. TRIBLE GATEWOOD, M.D.,
Richmond, Virginia.

When discussing the development of speech of a laryngectomized person, the phrase, "esophageal voice", is used with reservation. While the esophagus is the most essential organ involved in producing this form of speech, there are other important articulate units which enter into this mechanism.

Esophageal speech is not entirely new, it has been in a state of evolution for several years. The renewed interest in this phase of rehabilitation in conjunction with improved laryngectomy technic, has been a tremendous factor in aiding these patients to develop a type of speech independent of artificial devices.

The laity and the profession are thoroughly familiar with the handicaps imposed upon the blind and the deaf, but few have had the opportunity to give much thought to the rehabilitation of the patient who has lost his larynx in an effort to survive cancer. Total removal of the larynx is a dreadful handicap and it is difficult to appreciate the enormous readjustments that are required of the patient.

The laryngectomized patient is denied the pleasure of breathing through the nose and throat, which in turn impairs the sense of smell and the enjoyment of food. The larynx is not only the organ of sound, but it contributes to the mechanism of swallowing. The total and sudden loss of voice associated with temporary impairment of swallowing immediately after laryngectomy is often a very disturbing mental factor, and this is especially so, unless the physician can assure the patient that he has a reasonable chance to acquire another form of speech which may be understood.

Before the advent of esophageal speech a laryngectomized person communicated either by pencil and pad, pseudowhisper, or artificial devise. All of these methods are discouraging, even though the artificial larynx is used occasionally with fair success. The chief objections to this device are that the tones do not simulate the human voice. The stentorian sound attracts attention and causes embarrassment to the sensitive. In spite of its mechanical perfection, adjustments must be made fre-

quently, and then, loss of function is not uncommon immediately before the patient attempts to speak. For these reasons the artificial larynx should be reserved for those who cannot or will not learn the mechanism of esophageal speech.

When possible all patients should be encouraged to learn the art of esophageal voice. This form of



Fig. 1. Roentgenogram illustrating with barium the esophageal mouth of a laryngectomized patient who has a distinct esophageal voice.

speech when thoroughly mastered helps to identify the patient's personality and gives encouragement. If the speech was clear and well spoken before operation, the esophageal voice is more likely to follow this trend. This type of speech also has the distinct advantage of producing a favorable psychological effect upon these patients, which is so important in maintaining a healthy mental attitude during this difficult period.

It is said by some observers that the intellectual

From the Department of Otolaryngology, Medical College of Virginia.

*Read before the Virginia Society of Ophthalmology and Otolaryngology, at Lynchburg, May, 15, 1943.



Fig. 2. This film outlines the entrance of an esophagus of a laryngectomized patient immediately prior to speaking. Note the narrowed appearance.



Fig. 4. This patient's roentgenogram shows a controlled air reservoir in upper portion of esophagus.



Fig. 3. This film depicts multiple air pockets in the esophagus prior to talking.



Fig. 5. A moderately distended stomach, probably used in conjunction with esophageal air supply for speaking.



Fig. 6. This film illustrates a patient's stomach enormously distended with air immediately before attempting esophageal speech.



Fig. 8. Mr. V. L. P., returned to work soon after leaving the hospital. Instruction and practice were irregular, yet he can be understood by his fellow workers.



Fig. 7. While Mr. E. H. T. is relatively young and alert, we could never develop in him sufficient confidence to inspire practice.



Fig. 9. This negro had his larynx removed for carcinoma. He developed an excellent esophageal voice in nine months.

and ignorant lend themselves to the mastery of this type of speech better than those persons of average intellect. Why this is true, it is not stated. However, one thing does seem certain, and that is, it is necessary to create in the patient an optimistic attitude or a confidence in himself, before he undertakes the development of this form of voice. He must be encouraged and made to feel that he has triumphed in his operation, and that the next goal to attain is articulate speech. When this objective is realized, much has been accomplished and the found-



Fig. 10. Mr. K. O. R., had an extensive laryngeal malignancy requiring laryngectomy. He is one of our best students. He speaks very distinctly with his esophagus.

dation is laid for practice. There are patients, however, who occasionally develop a voice of quality with little or no instruction. When this occurs, you may be certain that the particular individual is endowed with unusual aptitude and determination.

We all know that the production of speech in a normal person requires the mechanism of three units, i. e., the lungs, the larynx, and the articulate group, which includes the tongue, cheeks, palate and lips. The latter structure mold the sounds into words as

the column of air and tones are formed by the lungs and larynx respectively. So, when we consider teaching a laryngectomized person to talk it may seem complicated because two important units of speech have been lost. The larynx has been totally removed and the current of air that formerly passed through the throat no longer enters the pharynx, but is now directed through the exterior of the neck.

While the esophagus has never before functioned in the production of speech, it now must assume the role previously taken by the lungs and larynx combined. In other words, this organ must play the part of the lung bellows and function in part as vocal cords as well. It is improbable that the esophagus acts as an air reservoir alone, because the hypopharynx and stomach have been frequently shown to be associated in this mechanism. This has been definitely demonstrated by Stern and others in a series of roentgenologic studies.

The actual mechanism of esophageal speech is primarily dependent upon the act of inspiring, or swallowing air and maintaining it, either in the stomach, esophagus or hypopharynx as the individual may elect. Then, under voluntary control, the air is utilized in proportional amounts at will. This, of course, must be synchronized with contractions of the esophageal mouth and hypopharynx. By persistent speech and inspiratory gymnastics the esophageal sphincter gradually assumes the function of a normal laryngeal glottis, and eventually develops specialized tone vibrations.

When evaluating the enormous amount of adjustment and re-education these patients must undergo, one should not omit the important part that the psychic and innervation phase may play in perfecting this speech. The tenth nerve supplies the esophagus, and it is well known that this nerve is closely associated with the parasympathetic nervous system. We are not certain what effect the post-operative esophageal pattern may have upon the formation of tones. Some authorities have suggested that the least amount of esophageal wall removed during the operation, the better is the patient's chance for clear speech. No tissue, of course, should be unnecessarily sacrificed, yet there can be no conservation of tissue adjacent to a malignant lesion. It does seem possible that a vertical closure of the esophageal opening may lend itself to a better sphincteric action of the cricopharyngeous muscle. When feasible close dissection should be preferable

in order to conserve esophageal branches of the superior and inferior laryngeal nerves.

There are many individual technics in the development of a pseudo-voice. Some patients find it an advantage to inspire frequently small quantities of air into the upper esophagus and hypopharynx when talking. Others may feel that swallowing air in large gulps, even to the point of using their stomach as a reservoir, is more satisfactory for their individual mechanism.

The scope of this paper does not allow a discussion of the many problems involved in developing a pseudo-voice in different persons, because no uniform instruction can be applied to all. The patient should be taught the fundamental methods of obtaining air and its voluntary control in association with the formation of letters, syllables, words and sentences.

Re-education of the psychic phenomenon is very difficult in some patients, whereas, others may encounter difficulty in disassociating reflex respiratory movements from this newer mechanism. Beginners are instructed to close the tracheal opening with their finger and then attempt to insufflate air into the throat during the act of chest expansion. Later, however, the need of respiration in the development

of voice is negligible under conditions existing in a laryngectomized person. Occasionally a patient is greatly hindered at the beginning because of his inability to disassociate respiratory movements from his speech efforts. The involuntary phenomenon continues to function and master the speech complex in its old way. During this fight for control, the patient may become so confused and fatigued that further efforts may seem useless. The patient must be told of these hazards and be encouraged to continue practice, though in a more limited degree.

It is always best to begin instruction six to eight weeks after operation. This frequently prevents the adoption of faulty whispering methods that are difficult to discard by the nervous and sensitive person. Loss of speech too long after operation tends to depress the patient and lessens the aptitude for learning. Most of these persons are elderly, and their ability to acquire an innovation is less acute than formerly. A laryngectomized person who has accomplished esophageal speech, is often the greatest assistance to a beginner. He immediately inspires confidence, and convinces the patient that speech is no longer denied those who have no larynx, if he is willing to learn.

800 Professional Building.

Neuropsychiatry's Importance in Armed Forces Is Emphasized.

A soldier suffering from what would ordinarily be called a nervous breakdown, a condition classified as a neuropsychiatric disorder, was punished quite unnecessarily by a general. This incident serves to focus attention again on the exceeding importance of proper organization of neuropsychiatry in the medical services so that the most possible can be done to prevent situations of this type in the future. With the beginning of the Selective Service examinations the importance of preliminary neuropsychiatric study became clear. Just recently the Selective Service Administration has improved its technic for this purpose. Originally it was contemplated that great numbers of neuropsychiatrists would be associated with the examinations of men for military service especially on the induction boards and that sufficient time would be allowed for such study. The speed of recruitment and the lack of sufficient personnel, as well as the failure to develop dependable technics, combined to prevent the type of study that needs to be made if any

considerable number of potential cases is to be eliminated from admission to the service. Up to April 1943 almost half a million men had been rejected for psychiatric reasons. About one-third of all casualties now being returned from overseas are neuropsychiatric. The strain of this war affects leaders, with the added stress of leadership, even more than it does the men in subordinate rank. Already it is clear that constant attendance by qualified neuropsychiatrists may serve to detect potential breakdown among aviators and to restore men in such condition to active service far more quickly than would otherwise be the case. * * * Since neuropsychiatric breakdown now constitutes a leading cause of disability, resulting in the loss of services of tremendous numbers of men both in the Army and in the Navy, the Secretaries of War and of Navy might well consider whether neuropsychiatry should be a major division in the organization of the administration of the Medical Departments of the Army, the Navy and the Air Forces. (*Editorial, J.A.M.A., December 4, 1943.*)

CLINICAL MANAGEMENT OF LOBAR PNEUMONIA*

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Since the introduction of the sulfonamide drugs as specific agents in the treatment of pneumococcic pneumonia the reduction in the mortality rate achieved by chemotherapy and the further subsequent refinement in the newer compounds in the group has put the therapy of the disease on a greatly improved and more stable basis. The physician now has at his disposal a therapeutic agent in which he places justifiable confidence for a successful recovery in 87-91 per cent of the cases.⁶ The remarkable specificity of the newer sulfonamides (sulfathiazole and sulfadiazine) for the pneumococcus group in general has produced a tendency to condense the treatment of all types into merely giving the patient the drug on a more or less general scale of dosage based on an "average" adult of 150 lbs. body weight. The administration of the drug is usually begun immediately following the establishment of the diagnosis of "lobar pneumonia" on a reasonably certain basis. This generally accepted concept of the treatment of the disease has been further fostered by the hypothesis that in the use of chemotherapy alone there is no particular advantage in determining the type pneumococcus present with possibly one or two exceptions in so far as concerns the specific effect of the drug on the organism.^{3a}

The experiences encountered at this hospital in the treatment of lobar pneumonia over the past 6 months and presented in this small series of cases have led us to question the completeness as well as the over all advantages of this concept of therapeutic management from several viewpoints. It should be made clear that there is no question raised concerning the validity of the uses and effects of the drugs mentioned above. (For a recent comprehensive summarization of the present accepted views concerning the sulfonamides the reader is referred to "Sulfanilamide and Related Compounds" by Wesley W. Spink, M.D.³) The particular considerations raised by our own experience in relation to the completeness of the present therapeutic concept are:

1. Determination of the type pneumococcus present.

a. Unless the type of the organism is known specific serum cannot be used.

b. If intolerance or untoward reaction to the drug develops requiring cessation of chemotherapy, knowledge of the type becomes important in relation to other forms of specific therapy.

2. The amount of the drug required in individual doses varies greatly among patients having the same body weight and skeletal development.

3. The concentration of the drug in the blood is the preferable guide to the amount of total as well as individual dosage and should be held at a sufficiently high level to:

a. Secure prompt and rapid therapeutic effect.

b. Prevent relapse of the infection following the initial clinical improvement.

c. Offset the possible development of "Fastness to the Drug" on the part of the organism through insufficient quantities of the drug.^{3b}

Consideration was also given to the possibility that the use of the comparatively higher levels of the blood sulfonamide might reflect itself in a lower incidence of pulmonary complications such as unresolved pneumonia, empyema, encapsulated fluid, pleural effusion, etc. Likewise, it was hoped that this would also show a further beneficial effect on the mortality rate.

While the terms lobar pneumonia and pneumococcic pneumonia are synonymous in most cases, a small group of cases are non-pneumococcic in origin as is pointed out by Lord *et al.*^{1a} that 4 per cent of these cases are caused by organisms other than the pneumococcus.

Lobar Pneumonia	96%	{	Pneumococcus (Including all 32 types)
			Influenza Bacillus
			Friedlander's Bacillus
			Streptococcus
			Staphylococcus

In this series of cases comprising a total of 91 cases of lobar pneumonia from October 1, 1942, to March 15, 1943, there were 5 cases of non-pneumococcic variety (Table I). No specific organisms

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were isolated in any of the 5 on bacteriological study. Three of these cases showed clinical similarity to the influenzal type of lobar pneumonia^{2a}: high temperatures (102.5-104) with disproportion-

of undetermined etiology (Virus ?) accompanied by moderate leucocytosis, elevation of the temperature, pulse and respiratory rates, with both physical and x-ray evidences of lobar consolidation.

TABLE I
LOBAR PNEUMONIA
(read horizontal divisions from left to right)

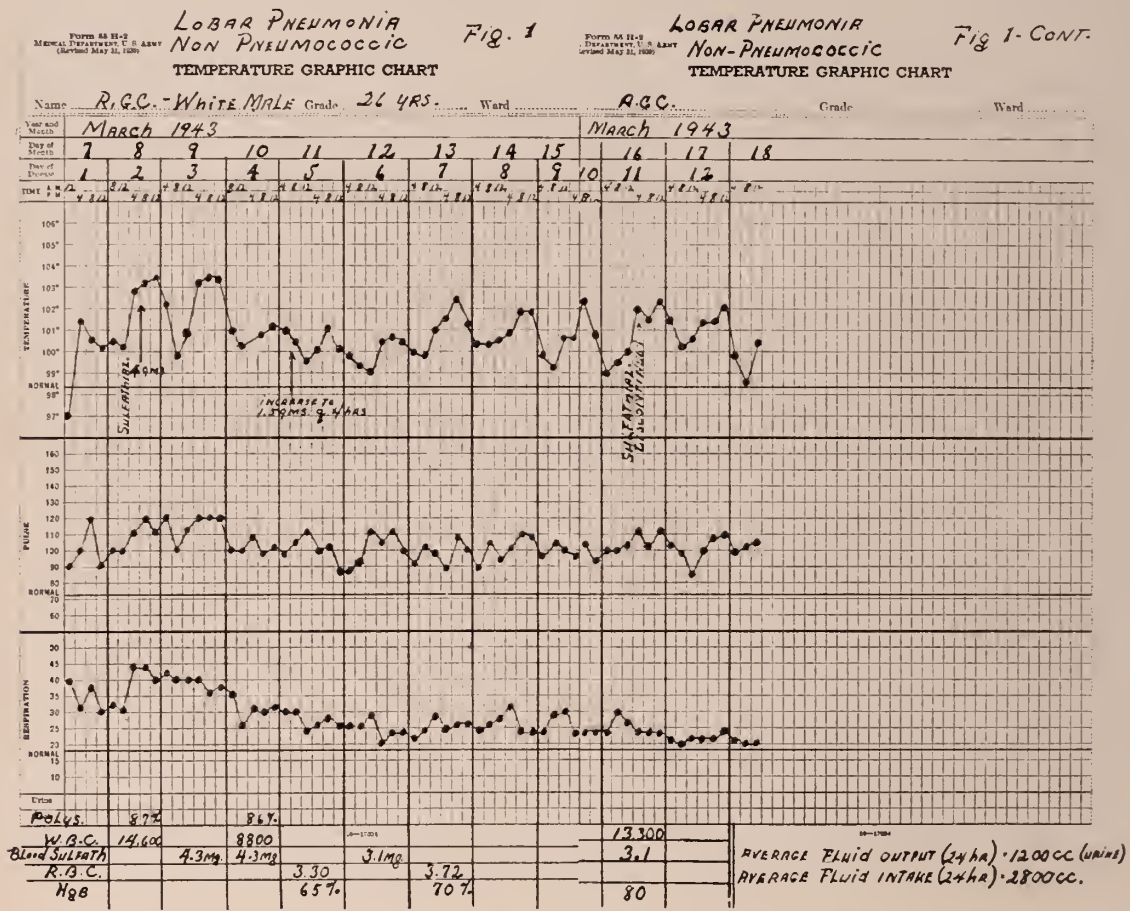
Pneumococcus Type			Pneumococcic Pneumonia														Total Pneumococcic Pneumonia	← →	Oct. 1, 1942-March 15, 1943
I	II	III	IV	VII	VIII	IX	XII	XIV	XVII	XVIII	XIX	XXII	XXIII						
Number of Cases			9	6	2	1	12	1	2	1	2	2	1	2	3	44	Pneumococcic Pneumonia	3 typed cases prior to Jan. 1, 1943 41 typed cases Jan. 1-March 15, 1943	
Sex	Age	Race	Pneumococcic Pneumonia Specific Type Undetermined															← →	Mortality rate typed cases - 2.27%
M	20-45 Av-26	W&B																	42
Sputum Positive No Pneumonia			1				3	1							1	1	(7)	These cases showed no pulmonary involvement. Classed as Acute Upper Resp. Infections.	
Lobar Pneumonia Non Pneumococcic No Specific Organism (see text) No. cases			Influenzal Type				Non-Pneumococcic Pneumonia Non Influenzal Type				5			1 Fatal case Type XIV - Not seen until late in course of disease. 4 Untyped Pneumococcoc Pn. prior to Jan. 1, 1943. 38 Untyped Pneumococcic Pn. Jan. 1-Mar. 15, 1943.					
			3				2												
Lobar Pneumonia No. of cases			Oct. 1, 1941-Mar. 15, 1942 29						Oct. 1, 1942-Mar. 15, 1943 91						Typing records for 1941-1942 not available.				
Broncho-Pneumonia Primary No. of cases			12						4										
Atypical Pneumonia Primary No. of cases			Statistic not available in form of final diagnosis for this period						Oct. 1-Dec 31 1942 243			Jan. 1-March 15 1943 206			No remarkable change in incidence with onset of winter weather.				
Positive Blood Cultures in present series			Pneumococcus Type										Neg		Serum Administration - 100000 units				
			I	II	III	XIV	XIV	XXII	Total	Cult	Total								
			1				1	1	3	67	70	Type I-White male over 40 yrs. of age			Serum administrat- ion combined with Chemotherapy at start.				
Specific serum Administered No. of cases			1	2	2	1			6			Type III-Combined therapy due to specific type present							
			Type III-Same as above																
Sulfathiazole stopped on 3 cases due to sudden de- crease in fluid output. On 2 of these serum treat- ment instituted. Remaining case made spontaneous re- covery. Drug stopped on case of Hematuria for 36 hrs. and then gradually started again without recurrence.												Type I - Sulfathiazole stopped on 3rd day due to sudden decrease in output			Serum substitu- ted for sulfa- thiazole in Type I and VII cases.				
												Type II-Unresolved Pneumonia? Serum given on 6th day							
												Type VII-Relapse with spread of process on 12th day							
8 cases received sulfadiazine exclusively. 7 cases sulfa- diazine substituted for sulfathiazole.																			
Case of Leucopenia noted on sulfathiazole administration. Count fell from 7,000 to 3,250 on 5th day of therapy. Blood sulfathiazole reported 3.4 mg. %.																			

ately slow pulse rates (100-110), only slight acceleration of the respiratory rates (24-30), low toxicity, normal white cell counts or a relative leucocytosis of granulocytes. The two remaining cases were

All 5 cases ended in spontaneous recovery after a chronic course and slow clearance of the pneumonic process from the lungs. All of them developed lobar pneumonias subsequent to mild or

moderately severe upper respiratory infections of a week or longer time period. Sulfathiazole therapy exerted no apparent effect on either of these 2 types and was discontinued after several days' trial. Figure 1 illustrates this negative therapeutic response in one of the two above cases of non-influenzal type. Figure 1a shows by contrast the prompt clinical

in this section of the country, is striking. Also striking was the fact that the incidence of atypical pneumonia which had been rather high during the Fall months, apparently was unaffected by the appearance of colder, wet weather in January and late December (Table I). This is in direct contrast to pneumococcic pneumonia which exhibited a marked



response to sulfathiazole within a period of 24 hours in a case of pneumococcic pneumonia (pneumococci present in sputum but typing unsuccessful). From the period of October 1, 1942, to March 1, 1943, a total of 91 cases of lobar pneumonia were seen (Table I). Over the same period of time the previous year, 1941-1942, a total of 29 cases were diagnosed as lobar pneumonia by clinical, laboratory and x-ray examination. The difference in the number of cases reveals a pronounced increase in incidence for this locality for the present year (1942-1943). The sudden increase in pneumococcic pneumonias in January following the advent of cold, wet weather beginning the latter part of December

rise in incidence with the arrival of wet, winter weather. From a study of 3,713 cases collected from the literature Heffron states that the most common types of pneumococci in adult lobar pneumonias are types 1, 3, 2, 5, 8, 7, 4, and 14.^{1b} As shown in Table I the most common types in this particular series of cases and geographical locality were Types 1, 2, and 7, with a scattered distribution in the remaining types (Table I). Approximately one-half of the pneumococcic pneumonias were reported as to the specific type of pneumococcus present. All typings were performed by the Neufeld method.⁹ Those upon which the spe-

cific type of organism could not be determined showed a predominance of pneumococci in the sputum on bacteriological study. These patients were classed as pneumococcic pneumonias, because, in addition to the presence of the specific organism, the lung fields showed a lobar consolidation to both x-ray and physical examination of the chest; the sputum grossly presented the characteristics of

Heffron in their text (1940) state that no such effect had been shown conclusively^{1c} but in this present series the majority of cases that could not be typed occurred in patients who had received drug therapy before the first typing was attempted. Whether or not this postulate in this particular group was more apparent than real cannot be said until a large number of cases are available with control methods applied. Other reasons for the failure to determine specific type were thought to be due to:

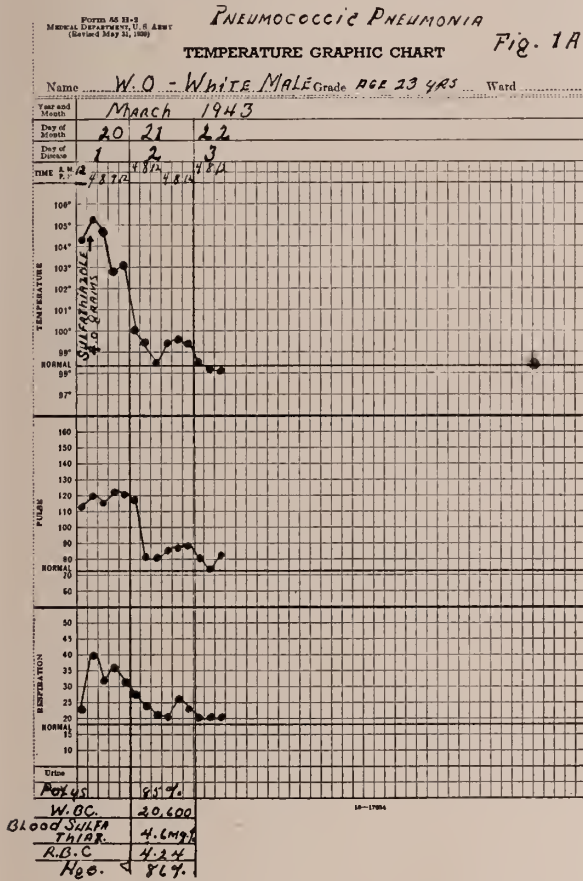
1. Sputum specimen obtained did not represent bronchial secretion.
2. Too few organisms in sputum at the particular stage of the disease at which specimen obtained (mouse passage was not done on specimens due to lack of animals for this purpose in this type laboratory).
3. Some inherent abnormality or variation in the individual organism.

It is seen in Table I that 7 cases were reported as having specific types of pneumococci present in the sputum on study but who ran acute upper respiratory infections only, without developing pneumonic consolidations or infiltrations in the lung fields. All of these patients made spontaneous recoveries without receiving sulfonamide therapy and were not classed as pneumonias.

We have considered it highly important to make every effort to determine the type of pneumococcus present in a pneumonic process even though this is generally of only academic interest in relation to the specific effect of the sulfonamide itself.^{3a} The importance of the determination of the pneumococcus type lies in connection with:

1. Possible use of specific serum either alone or in conjunction with the drug.
2. Possible use of specific serum in the treatment of complications or sequelae of the pulmonary infection.

In the former, specific serum may be indicated if the drug is not tolerated due to untoward or toxic systemic response (blood, blood forming tissues, renal system, skin, G.I. tract, etc.), especially in regard to possible secondary blood dyscrasia, renal complications and in decrease of fluid output.⁴ The drug was discontinued in three instances of the above series due to sudden decrease of the urinary output to below 1,000 cc. for 24 hr. period and in one case of reported gross hematuria. In the former by



that seen in this type of pneumonia (a brownish orange or "prune juice" appearance at certain stages of the infection); and other similar clinical features such as toxicity and leucocyte response; and, finally, a prompt response in 24-48 hours to sulfonamide therapy. The failure to type the organism successfully in these cases could not be definitely ascertained but was thought to be due to either the administration of the drug in a relatively large initial dose prior to the obtaining of proper material for typing or possibly to some variation in capsular polysaccharide. What effect, if any, the drug may exert on the organism directly or indirectly in this respect is not known. Lord, Robinson and

immediate cessation of the drug and with parenteral administration of fluids and hypertonic glucose solution intravenously, adequate fluid output was restored without further complication. Two of these cases were placed on specific serum treatment with cessation of sulfonamide therapy on 3-4 day of disease. The remaining case made a spontaneous recovery after cessation of drug on the fifth day of disease. In the case of gross hematuria the drug was stopped for 24 hrs., then begun again cautiously in small dosage with close observation. No further blood appeared in urine. Fluid output was adequate. Satisfactory recovery was made.

To combat the infection, maintain fluid balance and especially to secure adequate fluid output, a fluid intake of 3,000 cc. of fluid per 24 hrs. was ordered on all patients with pneumococcic pneumonia and record was made of this on graphic chart. All four of the above patients showed sulfathiazole crystals in the urine.

One blood dyscrasia secondary to administration of sulfathiazole was noted in this series. There was a sudden decrease in total number of leucocytes from 7,000 to 3,250 on the 4th day of sulfathiazole therapy in a case of non-pneumococcic lobar pneumonia of the left lower lobe. The concentration of blood sulfathiazole at this time was reported as 3.4 mg. per cent. The white count had not been elevated and response clinically to the drug was absent. With immediate cessation of the sulfonamide the white blood counts on the following two days were 5,400 and 9,100 respectively. The cells of the granulocytic series were not apparently reduced, being present in all counts from 60-70 per cent (no percentage reduction).

Specific serum was used in conjunction with sulfathiazole in the following types of cases of this group:

- a. In type 3 infections.
- b. More than 1 lobe involved.
- c. Patient over 40 years of age.
- d. In a comatose patient.

The presence of a positive blood culture for pneumococci in this age group with pneumococcic pneumonia, unaccompanied by any other conditions enumerated above, was not considered as an indication for combined therapy of serum and drug, as the response to sulfathiazole on the several cases reported with positive blood cultures to adequate doses of sulfathiazole was satisfactory (Table I).

In the latter postulate regarding the use of specific serum in complications or sequelae of the initial pulmonary infection, it was decided to use the serum experimentally on such later developments as unresolved pneumonia, empyema, pleural effusion, etc., when there was clinical evidence of a second period of infection characterized by a rise in temperature and leucocyte count with appropriate physical signs. A so-called second period of infection or re-invasion was further defined by the presence of a preceding interval of quiescence or apparent regression of the initial acute infection. Within these conditions specific serum was used in a total amount of 100,000 units given in divided doses to one case of unresolved pneumonia with apparent success (Type VII—see Table II).

Type II serum (100,000 units) was administered in case of right lower lobe involvement which on 6th day of disease had shown a poor response to sulfathiazole therapy with comparatively little change in physical signs. It was felt that this might represent an unresolved process. (This case is not included in Table II as a definite complication as no distinct improvement from the initial process could be shown.) The response to combined serum and chemotherapy which followed was slow but satisfactory. The basis for serum administration in this type case was the considered possibility of "Fastness to the Drug"^{3b} by a particular strain of the organism, especially when the concentration of the drug had been inadequate with subsequent manifestation of an unresolved process or other complication. As work has just been started on this particular problem with serum given for subsequent complication later in the disease to only two cases, no initial conclusions can be drawn until many more cases have been tried under proper conditions. It is likewise desired to correlate such administration and end results with Francis skin tests.^{1d} This unfortunately was not possible on the above two cases.

Serum in conjunction with combined form of therapy in the initial acute infection was given on three occasions (Table I). And in one case was changed from sulfathiazole to specific serum following a sudden decrease in urinary output on the 4th day of the disease.

With the sudden increase in pneumococcic pneumonia early in January, there was some confusion in differentiating the early pulmonary involvement of this type from the patchy and hazy lung density

of the atypical pneumonias which had been seen in relatively high number through the entire Fall of 1942. The chest x-rays of this latter type and the were diagnosed as "Atypical Pneumonia". Where the x-ray diagnosis was accepted as final by the clinician some delay ensued before proper therapy

TABLE II

Pulmonary Complications

* Lobar Pneumonia, Oct. 1, 1942 - Mar. 15, 1943.

Patient	Reg. No.	Sex Age Race	Location of Pneumonia	Specific Type	Blood Cult.	Therapy: Blood Level ² *	Clinical Response	Complication	Day of Disease	Therapy
TGD	33262	M 25 W	Rt. Lower Lobe	VII	Neg.	Sulfa-thiazole 3.5 mg.	Good Normal Temperature in 24 hrs.	Unresolved Pneumonia - Pleural Effusion - rt. ll.	Rise of Temp. on 4th day	Fair Response to Specific Serum
CCS	26670	M 42 W	Rt. Lower Lobe	I	Positive	Sulfa-thiazole 5.1 mg.	Good	Encapsulated Empyema - rt. l.l.	7th day	Thoracentesis Sulfadiazine
AH	33267	M 20 W	Lt. Lower Lobe	I	Neg.	Sulfa-thiazole 3.5 mg.	Good	Pleural Effusion left side	6th day	Thoracentesis
CHI	34555	M 32 W	Rt. Lower Lobe	VIII	Neg.	Sulfa-thiazole 4.6 mg.	Good	Small Pleural Effusion, rt.	7th day	Thoracentesis
TWC	33661	M 24 W	Rt. Lower Lobe	VII	Neg.	Sulfa-thiazole 3.4 mg.	Good	Pleurisy, rt. lower chest	6th day	Sulfadiazine
JTH	36570	M 20 W	Lt. Lower Lobe	Pneumococcus present, Type undetermined	Neg.	Sulfa-thiazole 2.4 mg.	Fair	Relapse - Non-Resolution	9th day	Slow clearing of density. X-ray contrast study showed Bronchiectasis in lt. l.l.
RRB	38895	M 20 W	Lt. Lower Lobe	Pneumococcus, Type undetermined	Neg.	Sulfa-thiazole 3.4 mg.	Good	Relapse - Non-Resolution	10th day	Gradual clearance
TJC	32831	M 22 W	Rt. Lower Lobe	Pneumococcus, Type undetermined	Neg.	Sulfa-thiazole 3.6 mg.	Fair	Pleural Effusion, rt. lung	5th day	Thoracentesis
EH	33992	M 21 W	Lt. Lower Lobe	VII	Neg.	Sulfa-thiazole 3.4 mg.	Good	Pleurisy, lt. l.l.	5th day	Sulfadiazine

* Percentage of complications for Pneumococcal Pneumonias alone - 10.5%

²* Average of first 4 days of illness.

beginning lobar involvement of the pneumococcal pneumonias in their initial stages were practically indistinguishable from an x-ray point of view and for a period of time nearly all initial, early, films

were applied with the result that in some cases a high degree of toxicity developed before a change in management was made.

Due to the very early hospitalization of patients

in Army hospitals, usually during the stage of the preceding acute upper respiratory infection, before any pulmonary involvement has occurred, the patients were being seen and examined with no or minimal physical signs over the lung field in contrast to the average pneumonic patient seen in a civilian hospital.

With this in mind, the similarity existing especially between these two types of pneumonia as well as early broncho-pneumonia in the initial phases

and Figure 3, a roentgenologically similar type of density representing a very early pneumococcal pneumonia involving the left base of the lung. Both films were diagnosed "Atypical Pneumonia". Figure 4 is a later film of the same lung field showing the later lobar involvement. To avoid error in the management of the case at this point total diagnostic reliance should not be placed on the x-ray alone and the clinical characteristics of the two processes should be kept in mind as certain differences can



Figure 2—Atypical Pneumonia, Left Base.

A patchy, stringy type of density just lateral to the lower left cardiac border, extending toward the periphery is noted. Increased hilar markings are present. Roentgen diagnosis "Atypical Pneumonia". Examination revealed scattered rales over left base posteriorly, slight decrease in intensity of breath sounds. No change in percussion. Slight decrease in vocal resonance. 2nd day of acute illness.



Figure 3—Early Pneumococcal Pneumonia, Left Base.

A hazy, stringy density is seen in the lower left lung field lateral to cardiac apex, extending toward the periphery. A Roentgen diagnosis of "Atypical Pneumonia" was made on the film. Decreased breath sounds, slight dullness to percussion, occasional rales and increased vocal resonance were present over left base posteriorly. 1st day of acute illness.

of the pulmonary involvement, should be carefully considered as they all may be represented initially on a chest film by a stringy, patchy, ill-defined density in a small area of the lung field. In this stage they all may be practically indistinguishable from an x-ray point of view: although the infiltrations in the atypical pneumonias are usually seen in the basilar or hilar areas of the lung field (Figures 2 & 5).

Figure 2 shows an atypical pneumonia with a patchy infiltration in the medial side of the left base

be noted by a careful observer and by periodic examination of the chest.

Atypical pneumonia in its early stages is largely an x-ray diagnosis due to the paucity and transient physical signs present over the process at a particular time. A decreased or increased intensity of breath sounds may be noted, as also scattered or localized patches of rales present or absent, no change or slight percussion dullness, and increased or diminished voice sounds in one or more small local areas over the area involved. Various combi-

nations of these may be heard at different times over an atypical pneumonia. It is well known also that the first obtainable physical signs over a small area of beginning pneumococcic pneumonia are usually represented by some combination of the above, but the essential difference is that, in the latter, signs of complete consolidation appear subsequently, usually in a matter of several hours. This is rarely, if ever, true in a pure atypical variety. The patient with beginning lobar consolidation presents a more toxic

Diminished breath sounds	} succeeded by	Bronchial breathing
Dullness to percussion		Bronchophony
Occasional rales		Dullness to percussion
Increased vocal resonance		

The latter group of physical signs are definite evidence of lobar consolidation,^{2b} and, likewise, it may occur prior to the demonstration of pneu-



Figure 4—Pneumococcic Pneumonia, Left Lower Lobe (Type VII).

Later film of same chest illustrated in Figure 3 showing complete consolidation of the left lower lobe. Bronchial breathing, Bronchophony and uniform dull to flat note on percussion over entire left lobe anteriorly and posteriorly are now present. No rales. 4th day of illness.



Figure 5—Atypical Pneumonia.

A stringy type of hazy density in the right base of the lung field.

No change on percussion, normal breath sounds, no change in vocal resonance, few scattered rales over right base posteriorly on examination.

Roentgen diagnosis of "Atypical Pneumonia". 3rd day of illness.

appearance in contrast to the relatively non-toxic facies of the other type, the white cell count of the blood is usually strikingly higher as contrasted with the normal or only slightly elevated count of the latter. The history of a definite shaking chill instead of a chilly sensation and the occurrence of pleuritic pain are definite aids in establishing early diagnosis. Lobar pneumonia in its beginning or initial stage holds a more definite and stable pattern of the physical signs:

mococci in the sputum. The judicious employment of the physical signs will thus be a most important means of diagnosis to the examiner in the early differentiation of the process if successive chest examinations are done at intervals of 4-6 hours. It should be stated at this point that broncho-pneumonia should not be omitted as a clinical entity in this discussion of differential diagnosis as it cannot be said at a certain stage of early lung involvement which of the three (or other rarer forms

of pneumonia) types is present, and as it is beyond the intention of this paper to go into the discussion of the differentiation of broncho-pneumonia from atypical pneumonia, suffice it to be said that broncho-pneumonia does not exhibit the physical signs of a uniform complete consolidation seen in the lobar or pneumococcal variety, but does show usually a leucocytosis in contrast to the atypical variety.

In the choice of a sulfonamide for drug therapy the experience so far on this group of patients indicates no remarkable difference in the specificity for the pneumococcus group as a whole between sulfathiazole and sulfadiazine which agrees with the views expressed by Spink^{3c} who, however, qualifies this statement by saying that sulfadiazine would appear to be the drug of choice because of the lessened incidence of toxic reactions and a lower acetylation. Occasionally a patient in this series was picked with a similar type already treated with sulfathiazole and given sulfadiazine throughout the course of the disease. No essential difference in therapeutic effect has so far been noted. All the patients who exhibited the renal complications previously mentioned were on sulfathiazole therapy.

In all pneumococcal pneumonias on chemotherapy it was endeavored to reach and maintain a blood sulfathiazole level of 10-12 mg. per 100 cc.^{3c} by varying the amount of drug administered. The average oral dose given was an initial dose of 4 gms., followed by two doses of 2 gms. each at 4 hr. intervals, with an average maintenance dose of 1-1.5 gms. at the same interval on a continuous basis. The blood level was determined at the end of 24 hrs. Ensuing dosage was adjusted according to the level found. Great variability was noted between individual patients in the blood levels attained on similar dosage which appeared to be independent of the body weight. It was necessary to reduce the dose unexpectedly at times in a large individual and conversely to increase it in a small individual. This variation in concentration was dependent to a large extent on the 24 hr. fluid output (including the measured urine output, plus the volume contained in the sweat, the bronchial, nasal and salivary secretions and bowel fluid) but it emphasized the importance of the blood level as the preferred criterion in determining the size of the dose to be given. Due to this factor of individual variation it was extremely difficult in some cases to reach and maintain the desired concentration on oral adminis-

tration even with amounts as high as it was deemed advisable to give. In some instances satisfactory therapeutic responses were obtained and maintained before the desired blood level could be reached. The comparatively high fluid intakes per 24 hr. period (3,000 cc.) which were being given may have exerted some influence upon this.

In utilizing these comparatively higher blood levels of sulfathiazole and sulfadiazine, supplemental medication was given by mouth to alkalinize the urine as an aid in preventing renal complications, particularly the blocking of the renal tubes by precipitated crystals of the drug as pointed out by Winsor and Burch.⁴

Satisfactory therapeutic response to the drug was evidenced by a rapid fall in temperature and pulse rate from a high level to normal within 24-36 hours from the start of the administration. Before electing to use the higher blood concentration of the sulfonamide, a tendency to relapse was noticeable in some cases, following the initial temperature fall and clinical improvement. This was evidenced by a gradual rise of temperature, pulse and respiration usually within the succeeding 24-72 hours. The concentration of the drug was found to be usually between 2-5 mg. per 100 cc. of blood, with an average of 3 mg. in many of such instances, but this low level was not the sole cause of a secondary rise of temperature. It was found that besides this many cases were being taken off the drug either partially or entirely too soon after initial clinical improvement had occurred. These relapses were successfully eliminated for the most part by increasing the drug concentration to higher value and by maintaining this on the established dosage for 48 hours after the temperature had returned to normal. It was then reduced gradually by increasing the time interval between each dose to 6 hours for the next 24 hour period. Following this 1 gram three times a day for 24-48 hours was administered, depending upon the clinical picture present. In general, the average length of time the patient received the drug was 6 days.

In seeing nearly all these patients in the early stages of the infection, difficulty in obtaining sputum specimens was not infrequently encountered.

A satisfactory specimen of material for typing can usually be obtained by one of the following.

- a. Careful explanation to the patient of what is desired regarding the obtaining of a speci-

men of sputum coughed up from the trachea, and providing a separate container for material cleared from the nasopharynx, and expectoration of saliva.

- b. Use of CO₂ inhalations.
- c. Broth culture of a swab of the posterior nares by a trained operator to avoid contamination.
- d. Specimen of gastric juice.
- e. Examination of material obtained from lung puncture.

Lung puncture as a means for obtaining material for typing was not resorted to in this present series.

Specific therapy can be delayed for 4-6 hours when necessary in order to obtain material for typing and blood culture. Urine specimens, blood counts and any other initial laboratory determinations desired may be obtained during this period or on admission. It is imperative that the blood culture be taken at this time as it has been previously pointed out that the initial dose of sulfonamide may sterilize the blood stream.¹⁴

Beginning with the introduction of specific antisera in the treatment of pneumococcic pneumonia there has been a dramatic and progressive reduction in the mortality rate up through the use of more recent sulfonamides, sulfathiazole and sulfadiazine. Mortality rates for various groups are:

1. No specific therapy⁵
 - a. For first three types
 - Type I 37.7 per cent
 - Type II 46 per cent
 - Type III 47 per cent
 - b. Types IV-VIII inclusive 18-25 per cent
2. With specific serum¹⁶
 - a. Average mortality rate, Types I-VIII inclusive (with exception of Type II) 12.8 per cent
 - b. Mortality rate, Type II 20.5 per cent
3. Drug therapy (sulfonamide)^{6,7}
 - a. Sulfanilamide 21.1 per cent (average)
 - b. Sulfapyridine 18. + per cent (average)
 - c. Sulfathiazole 8. + per cent (average) corrected

In group *c* this "corrected" mortality rate qualifies this group as exclusive of all cases which were fatal within first 24 hours after admission. With the inclusion of this group of cases the "uncorrected mortality rate" is 12.5 per cent. For "corrected" and "uncorrected" rates the figures of Price and Myers⁶ are practically identical with those of Flip-

pin.⁷

In this series of cases from October 1, 1942, to March 1, 1943, (total of 86 cases of pneumococcic pneumonia—Table I) one death, Type XIV, has occurred: a mortality rate of 1.16 per cent for the total number of pneumococcic cases. For the cases showing specific type alone the mortality rate is 2.28 per cent (Table I). The reasons for this reduced mortality rate at this hospital are thought to be due to:

1. The age group under treatment—20-40 years. Average age of group—25-26 years (only 7 cases over 35 years of age).
2. Early diagnosis of the disease.
3. Early institution of specific therapy.
4. Hospital care of patients(?). (Some statistics show a lower mortality rate for patients treated at home).¹⁸

The low mortality figure of this particular series of cases is gratifyingly low but is not offered as an average for pneumococcic pneumonia as a whole because it is a result of therapy in a "special" group. It is special not only in average age (with unfavorable age groups excluded due to occupation) but also due to the relatively better physical condition and training on the whole than in a civilian group of similar average age.

The use of oxygen therapy has not been mentioned in this paper previously, not because it was omitted in the management of these cases, but because its use and indications have already been covered in many excellent writings on the subject. Its use in general here was as an adjunct in circulatory and respiratory impairment including pleurisy and an anemia. Approximately 20 per cent of the cases in this series received it by tent for variable periods during the course of their illness. For a detailed discussion of oxygen therapy the reader is referred to "Manual of Oxygen Therapy Techniques" by Albert H. Andrews, Jr., M.D.⁸

The results of the management of this series of pneumonia cases at this hospital on sulfonamide therapy (sulfathiazole 82.7 per cent, sulfadiazine 8.1 per cent), and on combined chemotherapy and serum therapy in certain cases, is shown by a gratifyingly low mortality rate for a favorable age group (see above). No remarkable changes were noted in the incidence of complications of the initial infection (Table II). Inspection of the table reveals that nearly all of the blood sulfathiazole readings were around 3.5 mg. In one case the concentration was

5.1 mg. It cannot be concluded, however, that these relatively low blood concentrations of sulfonamide were in themselves the precipitating cause of a pulmonary complication, because, while none of those cases developing complications in the pneumococcic series has occurred so far with a high blood level of the drug, some cases with similar concentrations to those shown in Table II made satisfactory recoveries without subsequent complication. A variation in the toxicity of the infection present may be a factor. It is of interest to note that all of the complications so far recorded arose from pneumonias of the lower lobes.

In summary, it should be said that there are other phases in the management of this type of pneumonia which have not been touched upon by this paper but the particular phases of the problem which have drawn our attention most frequently in the general clinical management have been discussed. The influence on the therapy and handling of these cases on this Medical Service which resulted from the successive study of the cases may be summarized as follows:

1. Care in the history as to the occurrence of chill and chest pain, also as to type and duration of preceding illness.
2. Physical examination of chest periodically at 4-6 hours in the upright position in cases of early or suspected pneumonia.
3. Estimate apparent toxicity of patient.
4. Delay start of specific therapy for several hours if necessary to obtain blood culture and material for typing. Other initial laboratory specimens also may be taken at this time.
5. Determination of the type of pneumococcus present while not generally important to the specific effect of the sulfonamides is important in relation to the possible use of other forms of therapy.
6. The level of blood sulfathiazole is the preferable criterion in determining the amount of the drug to be given. A level of 10-12 mg. per 100 cc. seemed optimum for treatment of pneumococcic pneumonia.
7. The established dose necessary for desired blood level of the drug is continued for a full 48 hours after the temperature has decreased to normal, with gradual reduction of the dosage of the drug over the course of the succeeding 3 day period.
8. Alkalinization of the patient's urine as an aid

in preventing renal complications with the higher blood levels of the drug. Cessation of the drug if the fluid output falls below the 1,000 cc. per day.

9. The combined use of chemotherapy and serum therapy is advocated
 - a. If patient is 45 years of age or over.
 - b. If more than 1 lobe is involved.
 - c. If patient is comatose.
 - d. In Type 3 infection.

The author wishes to express grateful appreciation for the assistance of Captain George S. Grier, III, M.C., in assembling portions of the clinical data and to Mrs. Audrey G. McCartney for assistance in preparation of statistical tables.

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THE TREATMENT OF BURNS*

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The care and treatment of burn patients has been one of the problems of the medical profession since prehistoric man discovered fire. The methods used are too numerous to describe or even to mention, but it might be well to review some of the principles used in the past which we still use in treating our burn patients. One of the principles of modern therapy was first described by Billroth in 1871 when he recommended silver nitrate as a coagulating agent in treating burns. This method was entirely forgotten until 1925, when Davidson published the principles of the tannic acid technique. Bettman improved this technique by applying 10 per cent silver nitrate to 5 per cent tannic acid, thus forming an eschar almost immediately. Aldrich in 1933 introduced the use of the triple dye technique. Advances made since the present war began might be listed as: (1) the sulfa drugs; (2) the use of adequate amounts of plasma; and (3) compression dressings as advocated by Koch and others.

Because of the large scale bombing attacks on civilian populations and the widespread use of mechanized warfare, burns and their treatment have become a major problem to military surgeons. We in the Navy have still another type of burn casualty—the “flash burn” patient. An exploding bomb or torpedo generates a tremendous amount of heat which extends outwards from the point of the explosion. This “flash” can be seen but moves so rapidly that few of the crew are able to escape it. The heat generated is of short duration, probably 15-30 seconds, but is so intense that it will cause second and third degree burns of any part of the body not covered by clothing. Therefore, the face, neck, wrists, hands and ankles are the portions of the body usually burned.

The large number of burns occurring in this war has made their treatment almost as much of a specialty as orthopedic, neuro, chest, or other branches of surgery. In the past, burn cases were admitted to any “dirty” surgical ward and their care usually fell to an interne, but experience has proven the advantages of a well trained and cooperating “burn” team. Knowing that many of the casualties from

the recent landing in Africa would be burn cases, a special “burn” ward was prepared and ready when these cases were admitted to the Norfolk Naval Hospital. As advocated by Whipple, a special burn team consisting of a general surgeon, a plastic surgeon, a laboratory technician and, later, a physiotherapist, was assigned to this ward. Only nurses and corpsmen especially interested in burns and trained in burn treatment were chosen for duty. The complement of personnel had to be well above the usual number assigned to a ward of this size as burn cases require an extra amount of nursing care. Many nurses and corpsmen have been unable to



Fig. 1.—Corachan graft being excised from anterior abdominal wall.

work on this ward because of the odor and disfigurement of the patients.

For the first six months after opening the burn ward, we used Evans' method of treatment. This consisted of the application of No. 44 mesh gauze impregnated with 6 per cent sulfanilamide in equal quantities of cold cream and lanolin. Over this a compression dressing was applied. At first we had great hopes that the local use of sulfanilamide would prevent infection in the burns but this hope has not materialized. In addition, it is probable that sulfanilamide retards healing in third degree burns, as Veal has shown it does in other wounds. But the sulfa drugs by mouth or intravenously have decreased the number of cases of septicemia and death and therefore have a definite place in the treatment of burns.

*Read before the Norfolk County Medical Society, October 18, 1943.

In spite of using rigid sterile technique in dressing and redressing our cases, over 50 per cent of the third degree burns have become infected. Cultures taken from these infected cases revealed hemolytic staphylococcus aureus and hemolytic streptococcus. We have found wet dressings of 2 per cent acetic acid the best agent to clear up these infections. Although our percentage of infection is high, Meleney has reported a similar high percentage in 1,500 cases which included industrial wounds, burns, and compound fractures. All of Meleney's cases had the advantages of early treatment by skilled surgeons under ideal conditions. Military surgeons, with few of these advantages, can little hope for any marked decrease in the number of infections

row studies, we believe that this rapidly developing anemia is due to decreased production of red blood cells caused by a toxin from the burn rather than an increased destruction.

I do not intend to give a detailed description of all the countless techniques that have evolved for the treatment of burns. The originators of these methods have each reported excellent results using their own technique but most of these methods cannot be used by the military surgeon in battle because some require a large amount of nursing care, prolonged debridement, special equipment, etc. In battle, a surgeon must use the material and equipment at hand, use the method that is quickest applied, but is adequate and which requires the least amount



Fig. 2.—Excised full thickness skin being sluiced into grafts, each approximately 2 mm. thick and 1 cm. wide.



Fig. 3.—Grafts being placed on granulating wound. Note that donor site has been closed with interrupted sutures.

until some new drug or method of treating burns is discovered.

Within five days, severely burned patients develop anemia and hypoproteinemia. It has been reported that this anemia is due to an increased fragility of the red blood cells. We have been unable to substantiate this finding in any burn patient later than three weeks after the initial injury. We have seen no case of clinical jaundice, hemoglobinuria, or pink plasma. Our cases have shown normal or slightly increased resistance of the red blood cells. One of our patients showed a fall in the red blood count from four million cells with 72 per cent Hb. to less than two and one-half million cells with 52 per cent Hb. in four days. This fall in the red blood count developed in spite of the patient receiving a high vitamin—high protein—high caloric diet, adequate doses of ferrous sulfate and parenteral liver extract. Although we have been unable to make bone mar-

row studies, we believe that this rapidly developing anemia is due to decreased production of red blood cells caused by a toxin from the burn rather than an increased destruction.

of nursing care. An ideal burn dressing should protect the burn area from contamination, be bacteriostatic, prevent the loss of fluids and plasma, and relieve pain. The dressing should be easily applied and readily available, be non-toxic and non-constricting and give good cosmetic results. It has been our experience that a compression dressing over fine mesh vaseline gauze fulfills these requisites except that it is not bacteriostatic.

Tannic acid therapy has been the most widely used method of treating burns since Davidson first described it. There is no doubt that this method is the quickest and easiest applied, but, unless strict vigilance is maintained for infection, this method gives the poorest end-results. Under battle conditions, asepsis is seldom possible and the greater the number of casualties, the less is it possible to give each patient the care necessary to prevent infection. Tannic acid will destroy islets of undamaged epithe-

lium, and will convert many second degree burns to third degree burns; it prolongs morbidity in third degree burns as skin grafting cannot be undertaken until the eschar has been removed; it causes gangrene of the fingers and toes and the resulting scar is thicker and more apt to contract than when vaseline gauze is used. In the hands of inexperienced doctors or where adequate care is not available, tannic acid therapy can be more dangerous than the burn itself. For these reasons, the Navy Department advises against its use except in specially selected cases.

Skin grafting is indicated in all third degree burns as soon as a granulating surface is present—about ten to fourteen days after the initial injury. Formerly we believed that the area to be grafted had to be free of infection before grafting could be attempted but we have found that many grafts will “take” even though mild infection is present. The percentage of “takes” will be higher if the granulating surface is free of infection, but infection is no contra-indication to early skin grafting. We have used the Ollier-Thiersch, the “pinch”, the pedicle and the Corachan grafts, but have found the Corachan grafts so far superior to other grafts, especially if the area is large or if it is infected, that we seldom use any other method except in plastic repairs.

The Corachan method of skin grafting has several great advantages: first, the donor area of skin required is only half of that of the “pinch” graft; second, the wound produced at the donor site is immediately closed by interrupted sutures and heals by primary union. The skin section removed can be taken from any unburned area, care being taken that no subcutaneous fat is included. A narrow ellipse of skin approximately one-sixth the size of the area to be covered is excised and the wound sutured after undermining the edges. The section of excised skin should be divided longitudinally if it is more than three-fourths inch wide as the grafts should not exceed this width. The skin is placed on a wooden block and cut transversely with a razor blade into a number of thin strips not exceeding 2 mm. in thickness. These grafts are then placed on the granulating wound edgewise, that is to say, with one of the edges cut by the razor in contact with the granulations. These grafts are placed one-half to one centimeter apart, then covered with perforated cellophane or waxed gauze. Over this is placed a

thick dressing of gauze and mechanics waste or cotton moistened with 25 per cent glycerine in N. saline. Compression is maintained with a cotton-elastic bandage. This dressing is not disturbed for twelve to fourteen days unless the patient develops a fever.

Anorexia is a troublesome problem in the treatment of burn patients. The intake should be around 6,000 calories per day, but it is extremely difficult to get many of the patients to eat this amount. Frequent small feedings may enable the patient to obtain a high caloric diet, but usually the diet must be supplemented with transfusions of whole blood, and plasma and infusions containing amino acids in glucose to maintain a nitrogenous balance. Lund has described in his excellent paper how he gave 300 gms. of protein per day in the form of amino acids to a severely burned patient before obtaining a nitrogenous balance. Later he increased the dosage to 500 gms. of amino acids daily before healing took place. This is equivalent to ten pounds of meat. Amino acids may be given intravenously or intrasternally in 5 per cent glucose or by mouth. The latter route has been unsatisfactory in our patients because of the disagreeable taste of the acids, but they can be given with other nourishment through a Levine, or, better, a Miller-Abbott tube.

We have used Berkow's index to determine roughly the extent of a burned area but this method is not entirely satisfactory as it doesn't take into account the depth of a burn. Those patients burned about the face are more ill than others that have an equal or even larger burned area on any other part of the body. It is probable that the location of a burn is as important as the area or depth.

In the past, most surgeons have debrided burned areas. Even with sterile technique under ideal conditions, Meleney has reported that burns debrided have a higher percentage of infection than those not debrided. In battle, extensive debridement is seldom possible and future findings may prove conclusively that this tedious and time-consuming procedure is not only needless, but is harmful. Recently we have treated a few fresh burns by cleaning the area, excising shreds of skin and ruptured blisters but leaving unruptured blisters intact. These cases have all remained free of infection and made uneventful recoveries, but we have had too few cases to draw any conclusions.

The very existence of so many different forms of

burn therapy is proof that the ideal method which can be adapted to any type of burn has not yet been discovered. Almost any of the present day methods of treatment will give good end-results in second degree burns, but, regardless of the local treatment, the surgeon must keep in mind that he is treating an open wound and adhere to the principles of rigid sterile technique. No magic drug has yet been discovered that will replace epithelium in third degree burns except skin.

CONCLUSIONS

1. The treatment of burns has always been a major problem to the medical profession but this problem has been increased by the large number of burns occurring in this war.

2. Burn casualties are best treated on a special "Burn" ward by a "burn" team consisting of a general surgeon, plastic surgeon, physio-therapist and laboratory technician.

3. Sulfa drugs locally do not prevent infection and may retard healing of burns.

4. The percentage of infection in third degree burns is above 50 per cent in spite of using sterile technique.

5. The cause of the anemia seen in severely burned patients has not been definitely determined.

6. Whole blood, plasma and amino acids must be used in addition to a high caloric—high protein

diet to maintain a positive nitrogenous balance.

7. The Corachan method of skin grafting is superior to the "pinch" or Ollier-Thiersch grafts.

8. Berkow's index is not entirely satisfactory in determining the severity and prognosis of a burn patient.

9. Debridement of burns may not be necessary.

10. The ideal burn dressing has not been discovered.

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Should Vitamin D Be Given Only to Infants?

Vitamin D has been so successful in preventing rickets during infancy that there has been little emphasis on continuing its use after the second year.

But now a careful histologic study has been made which reveals a startling high incidence of rickets in children 2 to 14 years old. Follis, Jackson, Eliot, and Park* report that postmortem examination of 230 children of this age group showed the total prevalence of rickets to be 46.5 per cent.

*R. H. Follis, D. Jackson, M. M. Eliot, and E. A. Park: Prevalence of rickets in children between two and fourteen years of age, *Am. J. Dis. Child.*, 66:11, July, 1943.

Rachitic changes were present as late as the fourteenth year, and the incidence was higher among children dying from acute disease than in those dying of chronic disease.

The authors conclude, "We doubt if slight degrees of rickets, such as we found in many of our children, interfere with health and development, but our studies as a whole afford reason to prolong administration of vitamin D to the age limit of our study, the fourteenth year, and especially indicate the necessity to suspect and to take the necessary measures to guard against rickets in sick children."

OUTLOOK FOR THE NURSING PROFESSION*

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The intimate association which I have had the good fortune to have with the nursing profession for the past twenty-five years has enabled me to draw certain deductions about which I propose to talk to you. My association with graduating addresses has always led me to feel that such addresses were often too general and not sufficiently direct. It will be my effort to offer some positive suggestions to you which I hope may be helpful. I count among my best friends many women in the nursing profession. The success of my work has been absolutely dependent upon the interest and enthusiastic association of nurses and I cannot have other than the kindest and most sincere feelings toward your profession.

You may well feel that your profession has contributed to a material degree towards the progress which has been made in clinical medicine. Doctors generally and surgeons particularly have been dependent upon your intelligent recognition of the clinical course of patients when an effort has been made to evaluate properly the treatment which we have employed. This responsibility of the nurse has been constant since the time of the early development of your profession and you may well remember with pride that the greatest progress in medicine has occurred since the period of the recognition of the graduate nurse. You appreciate, I am confident, our helplessness when we try to prophesy as to what the future may hold in store for any of us, but certainly there is nothing on the immediate horizon to cause us to feel that the close relationship between the medical and the nursing profession may in any way be interrupted.

Many medical men today believe that we are approaching an era in which socialized medicine may be more generally emphasized. Thoughtful physicians with whom I am acquainted are not opposed to socialized medicine, but they do believe that the best interest of the patient may be served by accepting group medicine as it may be directed by the medical profession. So-called panel medicine of a type has been practiced in certain European coun-

tries for a half century. The men who have been most familiar with this particular type of practice have expressed views indicating that the relationship between patient and physician cannot be maintained in the practice of panel medicine, and, in consequence, scientific medicine has often suffered along with an associated disadvantage to the patients. I do not know that you will be called upon to ever render a decision in matters of this sort, but I can foresee a possible period when you may be faced with the dilemma of whether or not to associate yourself with medicine in a commercialized form. Frankly, I would want you to understand that my views of this problem must necessarily be prejudiced, but I do believe that I can advise you to look sincerely into the type of your association before affiliating yourself with any type of practice that may be in conflict with the regular medical profession. The inter-dependency between the nursing profession and the medical profession must necessarily be accepted if both of these professions are to continue their scientific efforts and promote their dual welfare.

When you chose the nursing profession as your life's work three years ago you naturally made sacrifices in order that you might fulfill the requirements of this prescribed course of instruction. The majority of your group were probably actuated in arriving at a decision to select this field of work because of a sincere desire to render intelligent service to your fellowman. You, of course, weighed in your mind the advantages offered you in the nursing profession as contrasted with the opportunities which were available to young women in other walks of life. Today the opportunities in the nursing profession are infinitely greater than they have been at any time in my knowledge of the history of our country. It must be a glorious sensation to you to feel that you are graduating at a time when there is such a great national need for the practice of your profession. Students of the history of nursing have told me that the demand for nurses has vacillated in cycles of about ten-year periods. This vacillation, I am told, has been reasonably constant, but I feel that with conditions as unpredictable as they

*Address to the Graduating Class, Jefferson Hospital, Roanoke, Va., May 26, 1943.

are today that there is strong evidence that there may be an extension of this cycle of urgent employment for a much longer period than has been constant in the past. Unless your Government has made a tremendous error in anticipating the number of casualties in this war, then there is every probability that there is going to be a lasting demand for nursing assistance over a long period of reconstruction, even after the war has been won. I appreciate, of course, the fact that the number of nurses who will graduate will materially increase, but I still doubt our ability to produce nurses as rapidly as the demand will require. In any event, the point of saturation in the nursing profession has not been reached and there is no indication that such a state is imminent.

Our Government has taken steps to offer nurses a recognition during this war which they have never had in any previous time. During the period of World War I the average nurse was given the status of a non-commissioned or warrant officer with a remuneration of such grades. Today nurses are accepted in the service and given commissions, and promotion has been made available in a manner that is befitting the fine service which you are qualified to render. It is my personal belief that with this changed recognition, on the part of our Government, your profession is being offered a position of dignity commensurate with your work and I believe that there will follow in civil life a recognition which will parallel your improved military status.

Many young women who are candidates for admission to schools of nursing will rightfully come to you within the period of the next few months to ask your advice about entering the nursing profession. Your opinion as expressed to this group of girls will properly carry considerable weight in effecting their decisions. There is available today for high school graduates immediate emergency employment which will offer very attractive returns. So far as I know, there is no assurance that this type of employment will continue after the war is over as contrasted with the rather definite assurance that the nursing profession has entered into an added place of dignity with a likely available constant employment. I hope that each of you will understand your responsibility to your profession in this matter and that you will act as advisors to this group

of young women who are making a decision now as to their life's work.

I am of the opinion that our state and nation owe a responsibility to the nursing profession which has long been unrecognized. It is probable that 80 per cent of the young women who will graduate in nursing this year in the State of Virginia will graduate from institutions which are not subsidized or rendered material assistance in any manner by state or national funds. This means that a tremendous majority of the graduates of nursing schools in Virginia have had offered them a very varying degree of nursing education. I am not unmindful of the fact that the State Board of Nurse Examiners has manifested a keen and intelligent interest in its effort to standardize nurses' education, but such efforts have not been sufficient to compensate for the limitation in funds which are available in many institutions that educate nurses, and, in consequence, the nursing schools have often suffered for lack of facilities. I personally doubt very much whether there exists an obligation on the part of any private or municipal hospital to operate a school of nurses. If such institutions assume this responsibility, then they must expect to derive certain benefits from the association of their nursing school. My feeling is that with the present high standard of nursing education, which we all believe in, there must be some standardized course of nursing education and some routine supervision of the amount of service which a student nurse may be required to supply the institution in which she is being educated. Our state and other states are making an all-out effort to standardize medical education and such education is assumed as a responsibility of the state. Similar responsibilities are assumed by the state in the training of lawyers, the training of engineers and in higher education generally. I do not know of any reason why the state does not owe the same responsibility to the teaching of nurses. I remember only too well the period in the development of your profession a few years back when many of the smaller hospitals profited financially by the efforts of the students in their nursing schools. The contribution which a student nurse makes today towards the care of sick people in an institution is certainly inconsequential as compared with their efforts and practice in the past.

You are graduating at a time when your hospital

has not received particular advantage as a result of your presence since the present nursing educational requirements demand that a large part of your time be given to instruction. Fortunately for you as individuals you have chosen for your training an institution with a fine reputation for meeting its obligations and you will go out in your life's work among the more fortunate in your profession. Many young graduates in nursing are less fortunate than you. For reasons which seemed good to them they chose to take their education in institutions with limited facilities and in many instances in institutions less interested in their welfare. When the State Board of Education has certified you as qualified to enter nursing schools and when the Nursing Board has approved the hospital which you have selected, then the state has exerted very little influence over your prescribed instruction other than to outline it in principle. Since the state has exerted no definite influence in the supervision of your instruction, it must be recognized that there is actually no orthodox procedure followed in various institutions.

I have thought for a long time that the various states have not met their responsibility to you when they did not insist upon a supervised and systematized course generally. I appreciate, of course, that this is not a simple problem, which may be adopted without financial responsibility on the part of the state, but when it is recognized how vital is the necessity for the production of nurses and how necessary is the standardization of this instruction, I feel that the various states should take some action in standardizing this educational program. It is my belief that an ideal arrangement would be for candidates for the schools of nursing to be primarily evaluated by the State Board of Education and the selection made by qualified nursing educators. Possibly the states could make arrangements to offer a standardized course of instruction in their various state controlled schools where all of the nursing sciences might be taught and some of the fundamentals of nursing practice taught for a period of a year or eighteen months. At the expiration of that time these girls might be placed in accredited hospitals where their nursing practices might be further taught with close approved supervision. I feel that your instructors should have the primary objective of promoting your further education in the

practical application of the principles which have been taught you and your supervisors would naturally see that your services were not exploited by the institutions which you were serving. It would, of course, be necessary that the hospitals which you were serving might be in some manner benefited by your presence and practice. An obvious criticism of this policy might come from the hospitals which were limited in their equipment and facilities, but when these hospitals were relieved of the necessity of educating you in the nursing sciences, an added benefit would be derived by the institution from your association with the nursing practices. Conceivably, however, students might spend a part of their hospital period in various institutions with a view of gaining the advantages of particularly valuable practices in individual hospitals.

Such a method of education would enable you to carry to these various institutions a more modern method of nursing practice which is a distinct need occasionally. I appreciate, of course, that this is a great departure from your present method of education, but I believe that the time will come when your profession will be strong enough to assert itself and to encourage adequate legislation in order that some systematized instruction may be offered to all young women who are giving such a vital period of their life to this effort. I predict that from this present world conflict many women will emerge qualified to offer definite advice in our post-war educational reorganization. There are many people who believe that our educational system is going to have many radical changes and departures.

One outstanding criticism of your system of education has manifested itself to me and I have often heard it referred to by my colleagues. When an institution or an individual is seeking the services of a nurse for some particular problem which requires responsibility, intelligence and application of principle, invariably a recent graduate of a nursing school is sought. Such a basis of selection would not be practiced in selecting an individual for any other type of employment from other professions. That is, we have felt that properly directed experience was vital in qualifying people to render a particular service. We must then ask ourselves why a nurse who has had the advantage of experience would not be more valuable than a recent graduate from a nursing school who necessarily has had a

limited practical experience. It is my belief that the explanation sought lies in the fact that the average nurse who has just graduated from a school of nursing has available to her immediately the relative maximum return for her efforts. Ordinarily at the end of a ten year period of practice the average nurse's income is not appreciably more than it is in a period immediately after her graduation. Of course these facts are not absolutely true in the instances of those of you who go into the teaching end of your profession or those of you who specialize in the various branches of your work. Such a criticism as I have made should not be offered unless an effort is made to suggest a remedy for its correction. I

believe that the spread between a nurse's immediate financial return after graduation and the return which may be offered after specialization is not sufficient. The human element as manifested in people has always shown a close alliance between effort and return and when there is not available to a highly educated nurse a better position than is available to one of mediocre education and indifferent interest, then there is little encouragement offered to promote improvement in one's professional advancement. I hope that the improved military status which is available to nurses today may encourage a further interest in this problem and ultimately result in correction of this erroneous practice.

Center for Scientific Study and Development of Physical Medicine.

The establishment of the first center for the scientific study and development of physical medicine as a branch of medical practice has been announced by Basil O'Connor, President of The National Foundation for Infantile Paralysis. The center will be in the Graduate School of Medicine of the University of Pennsylvania at Philadelphia, under the general direction of Dr. Robin C. Buerki, Dean. To set up this center, The National Foundation for Infantile Paralysis has made a grant totaling \$150,000 for a five-year period from January 1, 1944, to December 31, 1948.

It is stated that there are only a few schools or departments connected with any of the medical training centers which are equipped to explore thoroughly on a sound scientific basis the possibilities of physical medicine, and this is but the first step in a program which should afford a scientific basis for physical therapy and lead to the establishment of a more desirable teaching program.

Physical medicine plays a most important part in the treatment of infantile paralysis. Since it was first organized, the National Foundation has been continuously concerned with this phase of treatment. It has spent during the past six years over \$350,000 to educate and train physical therapy technicians. An additional \$364,000 has been granted to

laboratories and universities to study many problems in physiology and medicine having a close connection with the practice of physical therapy, but never before has it been possible to combine in one place both medical research and teaching in this important field.

Importance of Atabrine to Armed Forces.

The importance of Atabrine to the armed forces is highlighted by a telegram from Major Gen. Norman T. Kirk, surgeon general of the United States Army, to Winthrop Chemical Company, as follows:

"Reports from war fronts testify to the importance of Atabrine which has proven an excellent substitution for quinine in the treatment and prophylaxis of malaria. This product has filled a need of the Medical Corps and is responsible not only for the saving of lives but assistance in the maintenance of health of our troops. You may be proud of your contribution in the development of Atabrine."

Winthrop's research made possible the production of Atabrine entirely from materials available in the United States. Its own output of this drug is now 300 times greater than this country's annual prewar demand; in addition, Winthrop has issued to ten other pharmaceutical and chemical companies royalty-free licenses for the production of Atabrine for the armed forces.

A STUDY OF THREE THOUSAND BLOOD TRANSFUSIONS

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On the basis of over four thousand units of blood drawn from donors and more than three thousand blood transfusions given in this hospital within a period of fifteen months, it is possible to collect significant data upon the blood and the reactions to transfusions. Here, two separate blood banks are maintained for white and negro patients, although no physiological basis for separation has ever been demonstrated.

Technique of Operation: 500 cubic centimeters of blood are drawn from each donor by a semi-closed system into fifty cubic centimeters of sterile 5 per cent sodium citrate solution. The blood is typed by the open slide microscopic method, using typing serum which has been shown to give almost complete agglutination within 20 seconds in a 1:10 dilution, when tested with many different erythrocyte suspensions. The blood is stored at a temperature of 4° Centigrade until it is used, or until it is seven days old; it is then prepared as plasma. Direct cross-matchings are performed between all bank bloods and bloods of recipients; the test-tube method of Landsteiner is employed for this purpose.¹ Detailed data are kept on all bloods drawn and on all transfusions; these data form the basis of this report.

During the fifteen months' period, a total of 4166 pints of blood were collected. Of this number, 2164 were from white donors and 2002 from negro donors. When these bloods are classified according to groups, it is observed that the white bloods conform to the accepted distribution of the four blood groups in the United States. However, the percentage of type B bloods among the negroes is double that in the white B group; this has been observed previously by Snyder.² It is doubtful whether this variation has any significance apart from mere racial difference (Table I).

The incidence of a positive serologic test for syphilis was 1.2 per cent in the white group and 14.7 per cent among the negroes (Table II).

The incidence of syphilis in the negro population of this region is 20-22 per cent; the improvement noted in our series is a result of careful questioning

of the donors regarding history and treatment of syphilis.

TABLE I
Bloods Classified According to Group

BLOOD GROUP	NUMBER		PERCENTAGE	
	WHITE	NEGRO	WHITE	NEGRO
AB -----	91	69	4.5	3.3
A -----	872	490	40.3	24.5
B -----	230	423	10.5	21.2
O -----	971	1020	44.7	51.0
Total -----	2164	2002		

Transfusions: A total of 3154 blood transfusions have been performed within fifteen months. Of these, 1800, or more than 55 per cent, were for sur-

TABLE II
Incidence of Positive Serologic Test for Syphilis

	NUMBER	PERCENTAGE
White -----	25	1.2
Negro -----	295	14.7

gical patients, with unequal distribution of the remainder among the other services (Table III).

TABLE III
Transfusions by Services

SERVICE	NUMBER	PERCENTAGE
Medicine -----	646	20.5
Surgery -----	1800	57.1
Pediatrics -----	206	6.5
Obstetrics -----	408	12.8
Neurosurg. -----	94	3.1
Total -----	3154	

It may be noted from Table IV that approximately 70 per cent of the transfusions were given within the first three days after the drawing of the blood.

TABLE IV
Age of Blood at Time of Transfusion

Age of blood	0	1	2	3	4	5	6	7	8
(days)									
Number given	418	819	653	463	326	230	153	83	9

The studies of Scudder *et als.*³ and Muether and Andrews⁴ have demonstrated that the value of blood to the patient is in inverse proportion to its age. However, Belk and Barnes⁵ found that transfused erythrocytes of citrated blood kept at 4° to 6° Centi-

grade survived in recipients as long as did the cells of fresh blood, when the storage time did not exceed two or three days. A relatively small percentage of the transfusions were given with blood stored longer than four days. In addition to these 3154 transfusions, 554 pints of blood were prepared as plasma which was kept in the frozen state; the majority of these 225 cubic centimeter units of plasma were given during the period included. As a by-product of the plasma prepared after sedimentation of the erythrocytes at the end of four or five days, preparations of concentrated red blood cells were made by separation of the erythrocytes from the buffy coat (leucocytes, platelets, etc.) by suction. Several patients with anemia, complicated or uncomplicated, received transfusions of this material. Williams and Davie⁶ and others have recently reported their work on concentrated erythrocyte suspensions; a detailed report of our studies on concentrated red blood cells will form the subject of another communication.

Transfusion Reactions: Reactions to transfusions are best classified according to the causative factors, These may be:

- (1) non-specific factors
- (2) allergic factors
- (3) definite incompatibility between the blood of the donor and recipient.

Reactions due to non-specific factors are by far the most common, and constituted the vast majority in this series. Reactions with allergic manifestations are relatively less frequent, while hemolytic reactions due to definite incompatibility of the recipient's and the donor's bloods are uncommon.

The *non-specific reaction* usually appears as a shaking chill, with subsequent fever, occurring within an hour after the transfusion. Some patients develop fever in the absence of a preceding chill; this is also a manifestation of non-specific reaction to the infused blood. Another type of reaction following the use of blood stored in the refrigerator is a sensation of chilliness or even a definite chill without accompanying fever or evidence of destruction of the transfused erythrocytes. Undoubtedly the source of this response is that much of the blood is infused at 4°-6° Centigrade, and that a relatively cold material is introduced into the body. There are no chills without fever when blood is given at room temperature. In this group of cases chills

with or without fever and a temperature elevation of more than 2° Centigrade were considered to indicate the presence of a non-specific reaction. Of the 3154 transfusions, 205 produced chills or fever; there were 125 chills *and* fever, 44 cases of chills *without* fever, and 35 instances of simple temperature elevation. A febrile response was not considered to be present when the transfusion did not alter the temperature curve of a patient who was exhibiting a febrile course. An attempt was made to demonstrate any factors which could, by correlation, be shown to be the cause of the febrile reactions. In a few cases, individual patients suffered reactions with fever to more than one transfusion. For instance, one patient with an aplastic type of anemia received a total of forty blood transfusions within a year; each of the donor-bloods was compatible with the patient's blood. Nevertheless, she had a febrile reaction to all but two or three transfusions, without any clinical or laboratory evidence of an hemolytic reaction. In our experience there was no appreciable increase in the percentage of chills and fever with increasing age of the transfused blood (Table V).

TABLE V
Non-specific Reactions Correlated with Age of Blood

Age of Blood	-----	0	1	2	3	4	5	6	7
Number of Reactions	23	59	44	26	23	16	5	8	
Per Cent of Transfusions	---	5.5	7.2	6.8	5.6	7.0	6.9	3.2	9.6

Hamilton and Martini⁷ have emphasized the fact that the pregnant or puerperal woman is more susceptible to all types of transfusion reactions. They obtained 20.9 per cent reactions in pregnant cases, while there were reactions in only 11.4 per cent of their non-pregnant cases. From Table VI, it may be seen that no such disproportion occurred in our series, when febrile reactions were considered.

TABLE VI
Non-specific Reactions Correlated with Services

SERVICE	SURG.	MED.	OB.	PED.	NEURO.	TOTAL
Number of Reactions	107	57	30	6	5	205
Per Cent of Transfusions	-----	5.9	8.8	7.3	2.8	5.3

The highest percentage was 8.8 per cent, in Medical patients; in pregnant and post-partum cases the incidence was 7.3 per cent. Thus, although a few specific patients are more susceptible to febrile responses than usual, there is no correlation of these

reactions with the age of the blood or with the type of patient transfused. Extraneous factors, such as improper cleansing of equipment, have long been believed to cause most non-specific reactions.⁸ In our cases changing the sodium citrate produced no effect. No febrile responses had been occurring to intravenous fluids; therefore, pyrogens in the distilled water could not be incriminated. However, upon studying the series more carefully, it was noted that the reactions appeared in groups; several might occur within a day or two, without any subsequent reactions for a week or more. Examination of the equipment revealed that it was improperly cleaned at many of these periods of reactions, although the correlation was not exact. So the only demonstrable causative factor for non-specific reactions to blood transfusions in our group was variation in the technique of cleaning equipment.

Thirty-seven transfusions, or slightly more than 1 per cent of the total, were followed by symptoms of an *allergic nature*. In every instance the reaction was urticarial. Dyspnea occurred in one cardiac patient, but there was no true asthma; nor were there any instances of anaphylactic shock with sudden death. Wiener⁹ has discussed briefly the factors involved in allergic reactions. One patient in our group demonstrated definite allergy to plasma he received therapeutically.

Case 1: B. S., colored, male, age 50, blood group 0, was admitted on May 6, 1943, with a diagnosis of perforated peptic ulcer. He was operated upon and the perforation was repaired. Soon after operation he developed the signs of shock, and was given intravenously 1500 cc. of 5 per cent dextrose in saline solution plus 500 cc. of grouped plasma (Lot No. 34). Almost immediately he developed severe generalized urticaria, which responded to parenteral ephedrine sulfate. On May 7, he was given another 500 cc. of plasma from Lot No. 34; generalized urticaria appeared again. On May 10, he received 500 cc. of plasma from Lot 35; there was no reaction. During the remainder of his hospital stay his course was stormy, and it was necessary to give him 2000 cc. of grouped plasma from various lots. Allergic symptoms did not appear after the plasma or after blood transfusions. He gave no positive history of hay fever, urticaria, asthma, or other allergic manifestations. His family history was negative for diseases of an allergic nature.

Thus, in this case, there were definitely factors in plasma Lot No. 34 only which produced symptoms of an allergic nature in this patient.

Hemolytic reactions attributable to incompatibility between the blood of the donor and the recipient have been rare in our series. In the only case we have noted, Type A blood was given to a type B patient through neglect of the routine precautions.

Case 2: L. C., colored, female, age 23, blood group B, was admitted October 15, 1942, with generalized edema and dyspnea. Studies indicated moderate impairment of kidney function, and the diagnosis was chronic glomerular nephritis, nephrotic stage. NPN was 44 mgs. per 100 cc. and there was marked hypoproteinemia. On October 15, she received one 500 cc. transfusion of compatible type B whole blood without reaction. On October 27, cross-matching was again performed; however, the interne failed to follow the routine precautions of checking the blood. As a result the patient had received 150 cc. of type A blood when she suddenly developed nausea, vomiting, and severe abdominal pain. Her temperature dropped to 96°, pulse rose to 110 per minute, and the signs of mild shock appeared. During the next day she voided dark red urine, and she appeared slightly icteric. Although there had been good diuresis for the two days preceding the transfusion (output of 2050 and 3350 cc.), during the three subsequent days urinary excretion did not exceed 675 cc. in 24 hours. Her NPN rose to 52 mgs. per 100 cc. then dropped to 40; thereafter diuresis returned.

The physiological and pathological changes of hemolytic transfusions have been discussed adequately many times. Also the recently described Rh factor brings an added cause for incompatibility reactions. It is sufficient to state that such reactions may be avoided in almost every instance by the use of high titer typing serum, by routine direct cross-matching, and by testing for incompatibility due to the Rh factor in obstetric patients and in the patients receiving multiple transfusions.

DISCUSSION AND SUMMARY

This report is based upon the operation of a blood bank from the day of its inception. Technique of management and procedure have improved during this period, and the incidence of non-specific reactions has decreased steadily. The strikingly small percentage of hemolytic reactions can be ac-

counted for by strict precautions at every step, with insistence upon adherence to these rules. The use of concentrated erythrocytes has provided a valuable utilization of red blood cells which would have been discarded otherwise.

Forty-one hundred and sixty-six pints of blood were drawn and 3154 transfusions were given. The incidence of all types of reactions was 7.8 per cent. The incidence of a positive Wassermann was 1.2 per cent in white donors and 14.7 per cent in negro donors. Approximately 70 per cent of the transfusions were given with blood three days old or less. Almost 60 per cent were given to surgical patients.

N.B. Grateful acknowledgment is offered to Mrs. A. W. Collier for assistance in collecting the data.

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A Friendly Gesture.

A recent announcement which should prove of interest to American obstetricians and gynecologists comes from England. It relates to the endowment of a lectureship by an anonymous donor, a Fellow of the Royal College of Obstetricians and Gynecologists. The interest from a fund of one thousand guineas is to be devoted to a lecture every second year alternately by a member of the Royal College on the subject of infertility and by an obstetrician or gynecologist from the United States on any topic selected by him. This would mean that an invitation to an American participant would be possible every fourth year and the honorarium would amount to about seventy pounds or the equivalent of some three hundred dollars.

The Royal College of Obstetricians and Gynecologists was founded in 1929 by W. Blair-Bell of Liverpool who was its first president with William Fletcher Shaw of Manchester as secretary. The latter, after having served as president for the past

five years and being knighted, is now retiring from office and is being succeeded by Eardley Holland of London. The endowed lectureship commemorates Sir William Shaw's presidency and the anonymous donor wishes to demonstrate and further the friendship felt by our English colleagues toward the American profession. As such, it is worthy of our gratitude and appreciation. The postwar period with means of communication fully restored should witness the development of closer bonds between the great English-speaking countries. The interchange of ideas through the medium of personal contacts between groups interested in special branches of medicine can accomplish much, not only among the participants, but those whom they serve in a professional capacity. It is to be hoped that these objects may be possible of execution at an early date when the specter of war has been eliminated and opportunity offered again for more peaceful pursuits. (Editorial, *Amer. Jour. Ob. & G.*, Jan., 1944.)

A PRACTICAL METHOD FOR LOCALIZATION AND REMOVAL OF FOREIGN BODIES

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Of all the supposedly minor procedures that the surgeon is called upon to perform, the removal of small foreign bodies is often the most under-estimated. The difficulties and all too frequent failures encountered in this undertaking, can be embarrassing to the surgeon and discouraging to the patient.

With the vast increase in defense projects in this area in the past few months, we have had more than the usual number of foreign body cases. In gunshot wounds the modern high velocity missiles frequently pass both in and out. Thus we have comparatively few of these to remove. However, considerable material is available in the nature of smaller metallic foreign bodies from broken tools and gears. The small size of these objects makes them difficult to find at operation regardless of the accuracy of their localization by the usual roentgenologic methods. That others are having similar troubles is testified by cases referred from other clinics in which unsuccessful attempts at removal have been made.

Following a few unhappy experiences of protracted search terminated either successfully or unsuccessfully, we have adopted a very simple and to this date uniformly satisfactory routine on cases of opaque foreign bodies. It should be mentioned at this point that wooden splinters will often fall in this category, and always if there is any trace of lead paint on the wood.

The foreign body is first visualized on the fluoroscopic screen. The skin area over the site is prepared and a ten cc. syringe of 1 per cent novocain with two small calibre needles of sufficient length obtained. Under fluoroscopic visualization one needle is introduced into the skin at a slight angle. Infiltrating novocain ahead, the needle is brought into contact with the foreign body. This can be felt by both the operator and the patient as well as seen on the screen. The syringe is then removed and the needle left in place. The second needle is applied to the syringe and the same procedure repeated from a different point. Thus the points of the two needles meet at the actual site of, and in contact with, the foreign body. The patient is then removed to the

operating room and under local anesthesia it is the simplest of tasks to cut down to the point of junction of the needles and remove the foreign body.

While the technique was original with us, a search was made of the literature to see if the same or a similar method had been previously described. Reid, Black and McCaw¹ in 1938 in a very comprehensive study of the subject of foreign body localization have classified all of the more important methods which are on report. As early as 1908, W. I. Bruce² invaded the wound with an opaque instrument as an aid in localizing the object. The best known of the methods based on this principle is that of Walter S. Sutton.³ This was developed in 1915 when he was in charge of an American hospital in France. The



Foreign body in leg localized with two needles.

foreign body was located on the fluoroscopic screen. With the aid of local anesthesia and a small skin incision, a specially constructed cannula and trocar were introduced perpendicularly to the foreign body. The cannula was then removed, the trocar bent to the skin and the patient sent to the operating room for removal.

Several techniques have also been described wherein the complete procedure of removal is carried out with the aid of the fluoroscope. This has the disadvantage of immobilizing busy equipment and trained personnel for considerable periods of time. It is also quite difficult from the standpoint of maintaining perfect asepsis.

In 1939, Sebastian and Kibby⁴ reported eight

cases in which foreign bodies were successfully removed. These were localized by means of portable plates taken after the skin incision. Hemostats were fixed to the deeper fascial layers in the vicinity of the foreign body before the plates were taken. These instruments were left in place and used as guides in the subsequent search.

While we do not feel that our technique is necessary in every foreign body case, we do feel that it is a good routine to establish in all cases of any depth. Furthermore, small objects even sufficiently superficial for palpation have been known to become elusive after injection of novocain.

In summary, the following advantages may be cited:

1. Accurate and graphic localization of the foreign body and guides to facilitate its removal are provided.
2. It is a very simple procedure requiring no especial skill.

3. The risk of infection is kept at a minimum, since no roentgenologic procedure is necessary after the skin incision; and no incision is made in the fluoroscopy room.

4. No special instruments are required as in the Sutton technique.

5. Extra expenditure of x-ray plates is unnecessary.

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Medical and Surgical Relief Committee.

There is a critical need for medical and surgical supplies that may lie hidden and forgotten in your office: discarded or tarnished instruments, surplus drugs, vitamins, infant foods. Collected, packaged, sent to the Medical and Surgical Relief Committee, they can play a vital role in its program of medical relief for the armed and civilian forces of the United Nations.

Surgical instruments and medicines are sought-after by physicians and pharmacists' mates of our Navy, are hungrily snatched by the medical corps of our Allies. The work of war-zone hospitals and welfare agencies is too often crippled by the lack of medical supplies. Community nurseries in this country, refugee camps abroad cry out for vitamins and baby foods for their ill-nourished charges.

The Committee has supplied over 900 sub-hunting and patrolling ships of the Navy with emer-

gency medical kits; equipped battle-dressing stations on battleships, destroyers, and cruisers. The Committee's roll-call of medical requests—not one of which has been turned away—reads like a world geography: the Fighting French in North Africa and Tahiti; the Royal Norwegians in Canada and Iceland; the West Indies; South and Central Africa; China; India; Great Britain; Yugoslavia; Greece; Syria; Russia; Alaska and of course, the United States.

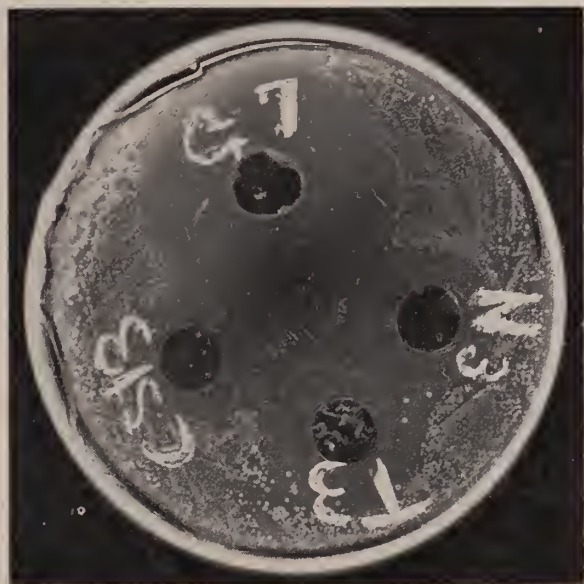
To meet the demands that pour into headquarters, the Committee needs all types of instruments, especially clamps, scalpels, forceps, and all kinds of drugs from iodine to sulfa products. By contributing what you can spare, you will help speed another shipment of sorely-needed medical aid.

The address of the Medical and Surgical Relief Committee is 420 Lexington Avenue, New York 17, N. Y.

THE USE OF PENICILLIN IN STATU NASCENDI

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Penicillin, the metabolic product of the fungus *Penicillium notatum*, is distinguished by its high bacteriostatic efficiency and low toxicity. In July, 1942, the writer received through the courtesy of Dr. A. D. Gardner, Oxford (England), a culture of the original strain which had been isolated by Fleming in 1929.



Nutrient agar inoculated with *Staphylococcus aureus*. Four "cups" are filled each with two drops of crude penicillin produced in different media. Largest zone of bacteriostasis at G7. Four-fifths of original size.

Experiments *in vitro* revealed the bacteriostatic activity of the crude penicillin. Results of these experiments were demonstrated at the annual meeting of the Medical Society of Virginia in Roanoke,

*From the Department of Bacteriology and Parasitology, Medical College of Virginia, Richmond, Va.

Doctors are oxydable products, and the schools must keep furnishing new ones as the old ones turn into oxyde; some of first-rate quality that burn with a great light; some of a lower grade of brilliancy; some honestly, unmistakably, by the grace of God, of moderate gifts, or in simpler phrases, dull.—HOLMES, 1867.

October, 1942. In the meantime modifications in culturing the fungus and new test methods have been tried out.

The final goal, of course, was the therapeutic use of penicillin. The purification of the crude penicillin requires an elaborate and expensive equipment. Since May, 1943, attempts therefore have been made to apply the crude penicillin after the destruction of the living fungus cells.

Whilst these experiments were in progress, Robinson and Wallace published a procedure whereby dressings are inoculated with the living fungus.¹ These dressings are applied to wounds where the produced penicillin acts *in statu nascendi*.

The therapeutical results with this method are gratifying. The most important fact, however, can be seen in the evidence that the living fungus does not cause any damage, but only displays its favorable action in producing penicillin.

Since the purified product will not be available for general use in the near future it is herewith suggested to take advantage in the meantime of the procedure advocated by Robinson and Wallace.

NOTE: Since the above was written this author succeeded in preparing a solution of penicillin which had been administered intravenously to two patients suffering with septicaemia, *Staphylococcus aureus* in one case, haemolytic *Streptococci* in the other case. Recovery followed in both patients, and no untoward reactions were observed. These cases will be reported in detail in a subsequent paper.

REFERENCE

1. Robinson, G. R., and Wallace, J. E.: An Inoculated Penicillin Dressing. *Science*, Vol. 98, pp. 329-330, October 8, 1943.

Medicine is the only profession that labors incessantly to destroy the reason for its own existence.—BRYCE, 1914.

War is the only proper school of the surgeon.—HIPPOCRATES, 415 B.C.

Heaven defend me from a busy doctor.—WELSH PROVERB.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

This is a colored 31 year old gravida IV para III, who had been discharged from a sanatorium in 1938 with a diagnosis of positive minimal arrested tuberculosis. The same diagnosis was made in a State clinic in May, 1941. She visited a physician when eight months pregnant, in December, 1941. He stated that she was emaciated, had a rapid pulse, frequent cough, and showed, in the chest, increased evidence of tuberculosis during the past year. At his insistence, she was admitted to the hospital immediately. The hospital record was scant. If an x-ray of the chest was made, a complete physical examination, or laboratory blood work done, it was not reported on the chart. On the day after admission the membranes were stripped from the cervix. Labor pains followed sufficiently severe to require morphine. Contractions stopped. On the next day she was given castor oil and quinine followed by 10 drop doses of ergot every hour for six doses. Extraovular catheters were inserted and spontaneous delivery occurred three hours later. Ergot and morphine were given postpartum and the placenta removed manually thirty minutes after delivery under nitrous oxide anesthesia. There was no abnormal bleeding at any time.

This has been classified by the Committee on Maternal Health as a preventable death. The remarks by the various members were directed toward the management of the patient covering the period beginning before pregnancy and extending through the time of delivery. The patient was discharged from a sanatorium at a time when contraceptive advice should have been given. The record does not comment as to this advice. She became pregnant and was not terminated during the first trimester—a fact chargeable to the patient for not having sought medical advice. Resort was made to various manipulations to induce labor when the patient was near term. No comment was made as to the condition of the cervix.

It is agreed among authorities in obstetrics and tuberculosis that this type patient should not become pregnant. When the condition is confined to the case under discussion it is likely that pregnancy could be prevented by sterilization only. Pregnancy might be permitted in a case in the upper economic level who could be under constant medical observation.

When pregnancy is complicated by tuberculosis, interference is not indicated after the first trimester. Not infrequently the tuberculous patient shows improvement during the second and third trimesters. The first physician to see this patient is to be commended in urging hospitalization; the management of the case after hospitalization is questioned seriously. The number of methods employed in inducing labor indicate that the patient was not at term. The excess manipulation was an added overload. Following delivery the placenta was removed manually, when, rather than a demand for immediate removal, there was every reason for leaving it alone. There was no bleeding and the patient was a poor risk. Death occurred suddenly thirteen hours later and the cause was given as "circulatory collapse".

Pregnancy in this case should have been prevented by contraceptive methods or by sterilization. Since pregnancy did occur it should have been terminated during the first trimester. The pregnancy was not terminated and, on that account, the patient should have been permitted to go into labor spontaneously unless the cervix showed the patient to be at term. Many reasons have been given for deaths occurring after delivery in patients having tuberculosis, among which are shock, blood loss that would not be fatal to the average patient and to pulmonary decompression. No autopsy was done. The end result may have been the same in this case regardless of the procedure but the suggested treatment would have received general support.

PUBLIC HEALTH

I. C. RIGGIN, M.D.,

State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for November, 1943, compared with the same month in 1942, and for the period of January through November, 1943, compared with the same period in 1942, follows:

	Nov. 1943	Nov. 1942	Jan.- Nov. 1943	Jan.- Nov. 1942
Typhoid and Paratyphoid Fever	16	16	211	238
Diarrhea and Dysentery	259	107	5,429	4,471
Measles	856	31	10,521	4,373
Scarlet Fever	227	304	1,634	1,456
Diphtheria	49	117	362	632
Poliomyelitis	4	3	60	41
Meningitis	31	12	804	151
Undulant Fever	3	3	36	32
Rocky Mountain Spotted Fever	2	2	55	47
Tularemia	6	0	46	33

CONTROL OF TOXIC PRODUCTS IN THE WORKING ENVIRONMENT

The safety factor involved in the current use of toxic materials in industry is complicated to a degree hitherto unknown. Speed up of production, rapid turnover of employees and resulting inexperience, lack of adequate employee supervision in the handling of such materials, substitution through necessity of more toxic materials for less toxic ones, and laxity in control associated with the maintenance of war production are important influences affecting this vital problem. In view of these unavoidable

hazards it is essential that as rigid a control as possible be established over the use of toxic materials in war-time manufacturing.

Such control can be secured through: 1. A scientific industrial hygiene survey of the plant; 2. Keeping abreast with improvements of materials; 3. Substituting less toxic materials whenever possible; 4. Establishing procedures for improved control, including mechanical installations and protective equipment; 5. Pre-employment physical examination for those assigned to processes involving toxic environments or the handling of toxic materials with special reference to established laboratory procedures; and 6. Routine, periodic physical check on all employees working with toxic materials, with rest for a prescribed period or transfer to a non-toxic environment of such individuals showing symptoms of toxicity.

By the adoption of the above mentioned rules (which calls for complete cooperation between the purchasing, safety, and medical departments of an industry), serious physical damage from exposure to toxic materials in every manufacturing process practically can be prevented. In this connection, medical and engineering industrial hygiene services continue to be available to Virginia industries through the Bureau of Industrial Hygiene, State Department of Health, Richmond.

WOMAN'S AUXILIARY to the MEDICAL SOCIETY OF VIRGINIA

President—MRS. W. CLYDE WEST, Alexandria.

President-Elect—MRS. PAUL C. PEARSON, Turpin.

Recording Secretary—MRS. C. C. SMITH, Norfolk.

Corresponding Secretary—MRS. N. G. SCHUMAN, Alexandria.

Treasurer—MRS. REUBEN F. SIMMS, Richmond.

Chairman, Press and Publicity—MRS. E. LATANE FLANAGAN, Richmond.

H. W. Rogers, to the House of Delegates of the Medical Society of Virginia in Roanoke, and appears on page 626 of the December 1943 MONTHLY.

A CHALLENGE FOR THIS YEAR

With the advent of the New Year, I am most happy to greet you, to congratulate you upon the past year's achievements, and to wish for you an approaching year of happy and successful work, brimming over with cheer.

The program of activity, as outlined at the annual convention in Roanoke last October, offers many ways in which we may participate in the suc-

The Old Year and the New.

A REPORT OF LAST YEAR

The report on the Auxiliary work for the year 1942-1943 was made by last year's president, Mrs.

cess of our State Auxiliary and the fulfilling of its purposes.

As your County Auxiliary is contacted throughout the coming year by each chairman of the State Auxiliary and her plan laid before you, nothing can mean more to the State Auxiliary than having each individual member accept the request and "carry through" to make it possible for her local chapter to turn in a response of one hundred per cent.

The reports submitted at the annual convention in 1943 were most encouraging, representing very wonderful work being done by the County Auxiliaries throughout the State. I compliment each and every member in Virginia, and urge you to put every endeavor into the present year and bring our Auxiliary through these trying days to a glowing conclusion of 1944, outshining any year that has ever gone before.

Cordially and sincerely yours,

EUNICE WEST,
(MRS. W. CLYDE)
President.

The Norfolk Auxiliary

Met on November 17th in the Library of the Medical Arts Building under the presidency of Mrs. R. M. Reynolds. Mrs. D. W. Hudgins, representing the Camp and Hospital Council of the American Red Cross, addressed the gathering on the need of recreational rooms for the service men in the camps in this area. Mrs. Hudgins said the people of Norfolk had contributed more generously than many realize towards these comforts. Already, more than 75 recreational rooms among the 375 camps in this area have been equipped by individuals and organizations in Norfolk. The Auxiliary voted to sponsor one of these rooms and have it ready before Christmas. Mrs. W. E. Butler was named Chairman of this project and will have Mrs. C. M. McCoy as her Co-Chairman.

Mrs. J. W. Reed read a paper on the Contribution to Modern Medical Science that was made by Mrs. Jane Todd Crawford in 1809, when she submitted to the first operation performed in this country for an ovarian tumor.

CLARA P. BROCK,
(MRS. M. F. BROCK)
Chairman, Press and Publicity.

Accomac-Northampton Auxiliary.

The regular quarterly meeting of this Auxiliary

was held at "Whispering Pine Lodge" in Accomac on November 18th. A delicious turkey dinner was followed by the business meeting, with the president, Mrs. O. R. Fletcher, Sanford, presiding. Mrs. J. L. DeCormis, Accomac, gave a delightful account of the State meeting held at Roanoke, saying that the high spots of the meeting were the celebration of the 21st Birthday of the Auxiliary and short sketches of their year's work given by the past presidents. She then read a poem "The Doctors' Wives". The Auxiliary was very proud to learn that it had again received the Silver Vase for the largest percentage of attendance at their meetings. The vase is to be again engraved with their name and will be on display at the Northampton-Accomac Hospital.

The new officers for the year 1944 are as follows: President, Mrs. W. Carey Henderson, Nassawadox; vice-president and president-elect, Mrs. John T. Mears, Keller; secretary, Mrs. W. T. Green Nassawadox; and treasurer, Mrs. J. Fred Edmonds, Accomac.

The Auxiliary voted to send their annual Christmas check to the Hospital, with the best wishes of all the members to the Superintendent.

The January meeting will be with Mrs. Rooker White at Keller on the second Tuesday of the month.

CATHERINE R. TROWER,
(MRS. HOLLAND)
Chairman, Press and Publicity.

BOOK ANNOUNCEMENTS

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us same.

The Compleat Pediatrician. Practical, Diagnostic, Therapeutic, and Preventive Pediatrics. For the use of Medical Students, Internes, General Practitioners, and Pediatricians. By WILBURT C. DAVISON, M.A., D.Sc., M.D., Professor of Pediatrics, Duke University School of Medicine, and Pediatrician, Duke Hospital; Formerly Acting Head of Department of Pediatrics, The Johns Hopkins University School of Medicine; etc. Fourth Edition. Duke University Press, Durham, N. C. 1943. vi-256 pages and Index. Cloth. Price \$4.00.

Care and Feeding of Children. Revised and Enlarged by L. EMMETT HOLT, JR., M.D., Associate Professor of Pediatrics, Johns Hopkins University; Associate Pediatrician, Johns Hopkins Hospital, Baltimore, Maryland. D. Appleton-Century Company, New York. 1943. xv-321 pages. Cloth. Price \$2.00.

Surgical Errors and Safeguards. By MAX THOREK, M.D., LL.D., D.C.M., F.I.C.S., Professor of Surgery, Cook County Graduate School of Medicine; Attending Surgeon, Cook County Hospital; Surgeon-in-Chief, American Hospital; etc. With a Foreword by Sir Hugh Devine, M.S., Hon. F.R.C.S. (Eng.), F.R.A.C.S., F.A.C.S. (Hon.), F.I.C.S. (Hon.), Past President, Royal Australasian College of Surgeons; etc. And a Chapter on Legal Responsibility in Surgical Practice by Hubert Winston Smith, A.B., M.B.A., LL.B., M.D., Associate in Medical-Legal Research, Harvard Law School and Harvard Medical School. J. B. Lippincott Company, Philadelphia. 1943. Fourth Edition, Completely Revised. 794 Illustrations, Many Colored. xvii-1085 pages. Cloth. Price \$15.00.

Nascent Endocrine Therapy. By JOHN FRANKLIN RITTER, M.D., Maquoketa, Iowa. The Caxton Printers, Ltd., Caldwell, Idaho. 1940. 317 pages. Cloth.

The Boy Sex Offender and His Later Career. By LEWIS J. DOSHAY, M.D., Ph.D., Psychiatrist, Children's Courts, New York City. Foreword by George W. Henry, M.D., Associate Professor of Clinical Psychiatry, Cornell University Medical College; etc. New York, Grune and Stratton. 1943. 248 pages. Cloth. Price \$3.50.

This is an important contribution in social pathology. The author has followed two groups of children, with behavior disorders, to adult life to determine the factors responsible and the efficacy of treatment received. One group was composed of juveniles with sex delinquencies only; the other group had shown delinquencies of all types. They find that poor home environment in general is the most significant factor concerned in both, ranging from alcoholism to mere lack of sex instruction. The results make one feel that delinquency would be negligible if certain parents were not permitted to have children.

One interesting finding is that when the sex offenders are tried in juvenile court before their parents, they are always extremely ashamed and almost never repeat the offense, indicating the importance of court trial, rather than attempting to keep the matter private. However, the mixed type of offender is usually unrepentant and defiant, and even boastful of such crimes as assault and burglary. This group shows much less improvement from social therapy, and it is apparently from such types that vicious adult sex offenders come. The reviewer believes that the ease with which sex offenses cause shame, as compared to assault and burglary, is prob-

ably related to the curious phenomenon of our civilized mores, that whereas books on murder mysteries are socially acceptable, magazines with illustrations of "pin-up girls" are investigated at great length in the midst of a war, by prissy postal officials.

The author is forced to the conclusion that more sex instruction to children is essential, and, although the home should be the place for this, that ignorance, disinterest, or fanaticism among many parents makes this impossible, necessitating its placement in school curricula.

This book is required reading for social workers in this field, for all judges of juvenile courts, and for physicians who have to handle the problem of juvenile sex delinquencies. Unfortunately the book is extremely dry reading, but it is a worthwhile contribution.

R. J. M.

Synopsis of Tropical Medicine. By SIR PHILIP MANSON-BAHR, C.M.G., D.S.O., M.D., F.R.C.P., Senior Physician to the Hospital for Tropical Diseases, Royal Albert Dock and Tilbury Hospitals; Consulting Physician in Tropical Diseases to the Dreadnought Seamen's Hospital, London; etc. The Williams and Wilkins Company, Baltimore. 1943. 224 pages. Cloth. Price \$2.50.

This book is a concise presentation of tropical medicine, written with a maximum of facts in a minimum of words. The pages are crammed with information presented in a manner especially suitable for those who wish an accurate summary of the chief clinical features, pathology, laboratory findings, differential diagnosis and treatment of tropical diseases.

The contents of the book encompass the protozoal, spirochetal, rickettsial, bacterial, virus, fungus, nutritional, and climatic diseases. Vegetable and animal poisons are briefly discussed, but there is a rather complete section on metazoal diseases and infections. Only the essential facts, necessary to make a diagnosis, prevent, or treat a tropical disease are given.

This is not a textbook of tropical medicine, but an up-to-date "synopsis" of our knowledge in this specialized field.

B. LEVY.

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No. 1

Report of the State Legislative Commission

OF interest to the medical profession generally and of momentous importance to physicians of Virginia is the report to be submitted to the next General Assembly by the "Commission for the Study of Matters pertaining to the Right to Practice the Healing Art in Virginia". Such a report presumably is the product of thorough and unbiased consideration of the subjects involved and as such should have great weight not only with Legislators but also with all citizens whose obligation it is to promote the health of the Commonwealth. Perusal of the report, however, confirms a suspicion that existed in the minds of many, from the time the Commission was authorized, that it was not what it was presumed to be.

When the Commission was first proposed by Mr. Campbell, it was welcomed by medical men who anticipated the selection of men of judicial temperament, unhampered by political commitments, who might find a satisfactory solution for a vexing problem and relieve doctors permanently of a heavy and disagreeable biennial responsibility. Little time elapsed before it became apparent that this was not intended. The speaker of the House very promptly appointed three Delegates who were either outspoken champions of cultists or whose sympathies were unmistakably with them. From the Senate were appointed two whose positions might be expected to balance each other and thus a majority of the Commission favoring the debasement of educational requirements for practice in the State was immediately secured. Due to defeat in the primaries or resignation, the personnel of the Commission, so far as the political appointees is concerned, has changed somewhat, but its complexion remains the same.

The two appointees of the Governor are not politicians, one being a scholarly lawyer of unimpeachable reputation and the other a distinguished college President. As the

Commission's report relates and as was to be expected, there developed after the initial meeting a "wide divergence of view" between the political members on the one hand and the non-political members on the other. As a result, a majority report has been rendered by the political members which was so objectionable as to call forth a minority report from the two independent thinkers.

Both reports recognize the need for a measure of scientific training for those who treat the sick and both advocate requiring that members of all cults pass an examination in the basic sciences before being licensed to practice. While such a requirement is a long step downward from the high standards set for medical licensing, many physicians agree to the principle involved. It is believed that those who have even a superficial training in science would rarely be cultists and it is well known that schools of cultists afford no opportunity for such training.

But when one examines the proposal for a basic science board contained in the majority report, one marvels at the ingenuity of the political mind. Or can it be naivete? It is proposed that the board consist of five members, three of whom are to be cultists, and two teachers from medical schools who are not practitioners of medicine. What function the last two are to perform is not specified; perhaps it is to lend tone to the board. Conference with their colleagues concerning the performance of their supposed duties would be like discussing astronomy with the Reverend John Jasper. One has to conclude that the only possible object that these statesmen had clearly in mind was the control of the basic science board by the cultists who are in the majority. This would make of any examination by such a board a complete farce. If it were seriously intended to examine candidates upon their knowledge of science, this could be done by the two teachers suggested or more or by the basic science section of the present medical examining board as suggested in the minority report. Thus the expense of another board would be avoided and the examination would be the same for science is science and does not bend to opinion.

As was expected, the Commission recommends that those practitioners of Chiropractics and Naturopathy now operating illegally in the State be licensed, provided that they have persevered in their activities for as much as four years and that they present certificates of good moral character. It is explained that this is a custom which should not be departed from. The Commission seems to lose sight of the fact that, in the past, requirements have always been raised. In the present instance, if the recommendation of the Commission prevails, the requirements for practice will, for the first time in the history of the Commonwealth, be lowered. Does the Commission believe that succeeding generations of lawbreakers, having completed their four years of "probation" will fail to importune a benign Legislature for recognition? Other cults, of which there are legion and which have been slighted by our Statesmen in favor of the more vocal and politically potent chiropractors and naturopaths, will flock to Virginia, lured by the prospect of so generous a reception. Presumably, persistent lawbreaking is, in the eyes of this Commission, additional evidence of good moral character and merits reward.

The Commission recommends an injunction procedure to be invoked after one conviction. This was proposed by the Medical Society of Virginia to the last General Assembly and was rejected. It would be of the greatest value if any illegal practitioners were left to whom it might be applied; but, under the Commission's recommendation, it will be comparatively simple for any one to practice legally, if not as a chiropractor, then as a naturopath.

On the whole, the report of the Commission is, to say the least, disappointing. It is difficult to understand the attitude of those who are willing to tear down what has

been erected by the toil and sweat of several generations of physicians in order to serve what they seem to consider political expediency. It is true that a considerable number of citizens have always patronized quacks just as they have craved narcotics, but no one questions the regulation or even the prohibition of the latter. It is also true that several States, but by no means a majority, have permitted what amounts to the free and unlimited practice of quackery, but this has come about through political pressure and there is nothing in the record of these States to indicate that Virginia should step down with them. The members of the Commission were duly warned by the State Board of Health and by the Department of Public Welfare of the disastrous effects of the legislation now proposed upon the work of these agencies; and by the State Department of Education of the danger of lowering educational standards. They were informed that neither chiropractors nor naturopathy is recognized as a science by any respectable university or scientific body in the whole world and this assertion could not be challenged by the cultists present. Yet from the high pedestal of the politician, the Commission asserts that chiropractics and naturopathy are sciences and must be given legal recognition as such.

It is depressing to realize that we face another General Assembly in *statu quo*. The proposal of the majority of the Commission for licensing chiropractors and naturopaths, while it is couched in somewhat different language, is to all intents and purposes the same old bill introduced many times in the past by the cultists themselves and many times defeated.

Medical Manpower

THIS problem might be divided into two parts, present need and future need. In other words one part of the problem is what the civilian population and the Armed Forces need now and the other is what the doctor will need at the end of the war. We must meet the emergency that faces us, and, by the same token, we must meet the needs of those men who have given up so much, when they come back after the war.

In round numbers 40,000 doctors is the requirement of the Armed Forces at present. Two thousand doctors will be needed for annual replacements. For this purpose it is estimated that 1,250 of the new graduates will be available. Next year 48,000 doctors will be needed. Some 7,000 civilian doctors have been declared available, but these have shown no intimation of applying for commissions. The authorities say bluntly that a new technic will have to be employed to reach these men. The volunteer system is through. The Army is doing its best to make the available manpower go as far as possible. Doctors that formerly served at the front have been replaced by corps men who have been trained in rendering first aid, which now includes giving plasma transfusions, hypodermic injections of morphine and applying pressure dressings. The doctors are kept back of lines where they are more useful. In the training areas in this country fewer and fewer doctors are available for attending service men's families.

In civilian life the shortage of doctors is just as acute and replacements fall just as far short as in the Army and Navy. For the next two years this increasing shortage can be counterbalanced by extra effort on the part of individual doctors. It must be remembered, however, that the doctors who have been left to the civilian population are the old and the physically incapacitated and the losses in this group will occur with increasing rapidity. Should the war last three or four years, as well it may, the situation will become critical.

At the end of the war the problem will be to supply the needs of the returning doctor. The American Medical Association has an able committee that is studying this

problem. Twenty thousand of the doctors now in the service have not engaged in practice. They will need placement. Most of them will have had only nine months of internship. They will want further hospital training. There must be available internships and residencies and scholarships. The older men will probably want refresher courses. Many will not want to go back to their former locations. The population of the country will have shifted tremendously, and the people will want a better distribution of medical services. Rural medical care will still be a headache after the war. There must be State postwar planning committees whose function will be to help locate the returning doctor advantageously and to help the various local areas secure adequate medical care.

Wartime Medical Meetings

IN the two years that our country has been at war many medical meetings have been called off, chiefly on account of the increased burden upon the transportation system that these meetings would cause. It has also been argued that with one-third of the doctors gone to war, the remaining doctors did not have time to attend a medical meeting. Of course, it could be argued with more truth that the increased burden of the civilian doctor was the very reason he should attend medical meetings. He cannot neglect anything that will increase his efficiency. The recent meeting of our State Society evidently supplied a need of Virginia doctors for the attendance was exceptionally good. Nor was there any difficulty with transportation.

Recently the editor attended a larger meeting in Cincinnati and a small meeting in Chicago. In this case he encountered considerable transportation difficulty. By starting negotiations early he was able to secure Pullman and hotel reservations. One-half of the menu card on the Big Four diner was taken up with statements about wartime travel. We were reminded that there were fewer Pullman cars and less food and more travelers and that many of the niceties of peacetime travel have been done away with. On the other hand we came in contact with more Americans than we ever dreamed existed. They were good-natured, determined, and seemed to know what they were about. It was a revelation to be jostled by these crowds. One stood in line for practically everything—to get on trains, to register at hotels, and to get into restaurants. In Chicago we were in line forty-five minutes by the clock, and all in line ahead of us had confirmed reservations. Our experience with queues made reading *Paris Underground* more realistic. We may have added a mite to the burden of the transportation system but we certainly were made a better American by our experience.

The meeting of the Southern Medical Association was notable for a number of reasons. For the first time in history the Association met north of the Ohio River. The program was streamlined so as to take only three days. Many of the exhibits and papers showed a distinct military flavor. For instance, the three papers of the Section on Pediatrics were (1) studies in measles prophylaxis, a study undertaken by the Research Council of the War Department, (2) ultracentrifugal, chemical and electric identification of the influenza virus, and (3) sandfly disease, observation on the natural and experimentally reproduced disease, an investigation of the Preventive Medicine Division of the United States Army. There were three papers on penicillin, one paper of refrigeration anesthesia, and one upon the treatment of sulfonamide-resistant gonorrhea in an army general hospital. The paper on treatment of obstinate cases of enuresis by pre-sacral neurectomy showed how one could make soldiers out of unfortunate men who would otherwise have to be discharged from the Army. The paper upon virus pneumonia centered upon the way of knowing when the convalescent could be returned to military duty. We cite these papers to show the range of subjects dis-

cussed and their up-to-dateness. The address of Surgeon-General Norman T. Kirk upon the care of battle casualties and the causal sick, and the description of General Fred W. Rankin of his trip around the world were greatly enjoyed. Unfortunately, we did not hear Major Charles M. Caravati's paper on post-hepatitis syndrome, but we heard it well spoken of. From the exhibits we learned that the magnesium ion would relax a tetanically contracted human pregnant uterus in 30 seconds. In another exhibit charts showed that the average length of life has increased from 48 years in 1900 to 63 years in 1940, which means that 2,800,000 men of ages 20 to 45 have been added to America's fighting and producing forces.

The meeting in Chicago was that of the Annual Conference of Secretaries and Editors of Constituent State Medical Associations. James E. Paullin, President of the American Medical Association; Herman L. Kretschmer, President-Elect of the American Medical Association; Deputy Surgeon-General George F. Lull; Victor Johnson, Secretary, Council on Medical Education and Hospitals, and Commander Lapham discussed the present military needs and postwar planning for doctors. General Lull divided the medical profession into three groups: those in armed forces, the old and essential, and those who do not care for military service. The latter is a small group, but it is causing a great deal of concern and is giving the profession a bad name.

Another session was given over to the discussion of obstetric and pediatric care for the wives and children of service men as administered by the Children's Bureau. All but three States have "accepted" the plan, although it seems from the discussion the acceptance was anything but voluntary. As the representative from North Dakota expressed it: "We have refused to be browbeaten into acceptance of the plan." He boasted of his Governor who so managed public opinion in the State that they could maintain their independence. Dr. Kress of *California and Western Medicine* raised the point that the millions of deliveries all over the country which are being paid for by the government at from \$35 to \$50 per case would fix in the mind of the public that this is the standard fee in normal times. The public knows that the government pays top prices for everything else it buys and will naturally think that the \$35 to \$50 is also top price. It was quite evident that there is a widespread feeling that the Emergency Maternity and Infant Care service is an entering wedge of federal controlled medicine, or as was stated, "a foot-in-the-door". One speaker called it "two feet in the door". Everyone must agree with the aims and purposes of the EMIC plan. It is to be regretted that politics should place so many obstacles to the smooth working of the plan.

Our New Cover

TO keep up with the spirit of the times, the MONTHLY comes out this month in a new dress. We hope that it pleases our readers. The space in the lower right hand corner, occupied by the Staff of Aesculapius, is reserved for the original seal of the Medical Society of Virginia. This is described in the Proceedings of the Society for November, 1873, but we have no illustration of the seal. It bears the inscription "*Sigillum Societatis Medicae Virginiae*". Anyone knowing a picture of the seal or the whereabouts of the seal itself would confer a great favor on us by giving us this information. This would also make it possible to increase the attractiveness of our cover.

Societies

Richmond Academy of Medicine.

The annual meeting of the Academy was held on December the 14th, with the president, Dr. A. S. Brinkley, presiding. Following reports of committees on the year's work, the following were elected as officers for 1944: Dr. E. H. Terrell will automatically become president; Dr. T. Dewey Davis was elected president-elect; Dr. Douglas Chapman and Dr. J. E. Warinner, Jr., vice presidents; and Dr. John Lynch and Dr. Rex Blankenship the two new members of the board of directors. It was stated that approximately one-fourth of the membership of the Academy are now with the armed forces. Following the meeting, the doctors adjourned to the dining room where a special buffet supper was served.

Medical Society of Northern Virginia.

At the annual meeting of this society, held recently, Dr. Charles O. Dearmont of White Post was elected president for the ensuing year, succeeding Dr. D. M. Kipps of Front Royal. Dr. B. B. Dutton of Winchester was chosen vice-president, and Dr. J. E. Harris, also of Winchester, was re-elected secretary-treasurer.

Norfolk County Medical Society.

Dr. Claiborne Willcox has been elected president-elect of this Society to fill the vacancy caused by the death of Dr. Frederick C. Rinker.

Virginia Peninsula Academy of Medicine.

The Academy held its December meeting on the 20th at the Coca-Cola Recreation Building in Newport News, a social hour preceding the meeting.

The speaker for this meeting was Lieutenant Commander Edward L. Alexander, formerly of Newport News and first president of the Academy. His topic was "Evaluation of Physical Medicine Procedures in War and Peace". Dr. Alexander recently completed a six months' graduate course in physical medicine at the Mayo Clinic.

Dr. Waverly R. Payne of Newport News is president and Dr. R. H. Wright of Phoebus secretary-treasurer of this organization.

The Mecklenburg County Medical Society,

A component part of the Fourth District and Southside Virginia Medical Association, at its meeting on December the 10th, re-elected Dr. W. J. Ozlin of South Hill as president and Dr. W. W. Wilkinson of La Crosse as secretary-treasurer. The Society at this time also approved the State Examiner system in place of the present coroner system.

Roanoke Academy of Medicine.

The December meeting of the Academy was in the form of a dinner meeting at Hotel Roanoke on the 6th, with Dr. A. M. Groseclose presiding. Speakers on this occasion were Dr. Warren T. Vaughan of Richmond, who spoke on "The Broad View in the Treatment of Allergy", and Dr. H. B. Mulholland, Charlottesville, whose subject was "Diabetes Mellitus".

The January meeting on the 3rd, will have to do with Industrial Medicine. Host for this meeting will be the American Viscose Corporation, located in Roanoke, and Dr. John F. Cadden, medical director of the plant, will have charge of the program.

News

Committees of the State Society.

In error, the personnel of the ADVISORY COMMITTEE TO THE WOMAN'S AUXILIARY was omitted in the list published in the December MONTHLY. This is composed of Dr. H. A. Latane of Alexandria as chairman, and Dr. D. C. Wilson and Dr. O. O. Ashworth.

A new committee, to be known as the MENTAL HYGIENE COMMITTEE, has since been appointed by President Bowyer, and this is composed of Dr. Joseph E. Barrett of Williamsburg as chairman, and Dr. D. C. Wilson, University; Dr. R. Finley Gayle, Richmond; Dr. C. F. Graham, Wytheville; and Dr. O. B. Darden, Richmond.

Medical Graduates.**UNIVERSITY OF VIRGINIA**

There were fifty-four graduates in medicine at the University of Virginia, the commencement being held on December 13th. Only brief and simple exercises were held. Dr. Harvey E. Jordan, Dean of the School of Medicine, presenting the graduates, and President John Lloyd Newcomb conferring the degrees. The following are graduates with their hospital appointments:

UNIVERSITY OF VIRGINIA HOSPITAL, Charlottesville: Drs. Frank Smoot Beazlie, Jr., Newport News; Henry Boone, Jackson, N. C.; Lenora Virginia Brown, Charlottesville; George Benjamin Carter, Charlottesville; Peyton Randolph Evans, Jr., Washington, D. C.; Walter Cleveland Fitzgerald, Crewe; Innes Correll Haines, Arlington; Willard Chappell Hewitt, Elizabeth City, N. C.; Garnett William Link, Danville; and Edgar Newman Weaver, Grosse Pointe Park, Mich.

MEDICAL COLLEGE OF VIRGINIA HOSPITALS, Richmond: Dr. Loren Francis Parmley, Jr., Falls Church.

NAVY HOSPITAL, Portsmouth: Dr. William Clayton Barr, Virginia Beach.

LAKE SIDE HOSPITAL, Cleveland Ohio: Drs. Thomas Grasty Bell, Staunton; Donald Terrell Faulkner, Blackstone; and William Lunsford Long, Jr., Raleigh, N. C.

CLEVELAND CLINIC, Cleveland, Ohio: Dr. Maurice Miller Bray, Charlottesville; Charles Milton Clark, Akron, Ohio; and William Edwin Hoy, Jr., Columbia, S. C.

CINCINNATI GENERAL HOSPITAL, Cincinnati, Ohio: Dr. William Gordon Leary, Charlottesville.

U. S. PUBLIC HEALTH SERVICE, Staten Island, N. Y.: Dr. Jose Angel DeJesus, San Juan, P. R.; Robert Ernest McAlpine, Portsmouth; Howard Elmer Smith, Lincoln Park, N. J.; and Walter Dickenson Woodward, Richmond.

NEW YORK POST GRADUATE HOSPITAL, New York, N. Y.: Dr. Elizabeth Harman Hill, Charlottesville.

NEW YORK HOSPITAL, New York, N. Y.: Drs. Francis Charles Jackson, Rutherford, N. J.; and Louis N. Waters, Portsmouth.

PRESBYTERIAN HOSPITAL, New York, N. Y.: Dr. Carl Millard Lang, Charlottesville.

KING'S COUNTY HOSPITAL, Brooklyn, N. Y.: Dr. Henry Rankin Miller, Washington, D. C.

BELLEVUE HOSPITAL, New York, N. Y.: Dr. Lee Elias Whitlock, Jr., Norfolk.

NAVY HOSPITAL, Bethesda, Md.: Dr. Joseph Shelton Bower, Salem.

HOSPITAL FOR THE WOMEN OF MARYLAND, Baltimore, Md.: Dr. Mary Martin Wade, Charlottesville.

ST. JOSEPH'S HOSPITAL, Reading, Pa.: Dr. Raymond Reuben Comess, Norfolk.

PHILADELPHIA GENERAL HOSPITAL, Philadelphia, Pa.: Drs. Julian Quayle Early, Bridgewater; and Leonard Irving Malis, Atlantic City, N. J.

PENNSYLVANIA HOSPITAL, Philadelphia, Pa.: Dr. Robert Steele Hutcheson, Lexington.

UNIVERSITY OF PENNSYLVANIA GRADUATE HOSPITAL, Philadelphia, Pa.: Dr. John Robert Troxell, New York, N. Y.

CHILDREN'S MEMORIAL HOSPITAL, Montreal, Can.: Drs. Kelley King Davis, Waynesboro; and Anne Newhall, Brookline, Mass.

MONTREAL GENERAL HOSPITAL, Montreal, Can.: Drs. Harper Keith Hellems, Charlottesville; and Helen Wickham Taylor, Charlottesville.

HARTFORD HOSPITAL, Hartford, Conn.: Dr. Frederick John Flynn, Jr., Ft. Lauderdale, Fla.

GEORGE WASHINGTON UNIVERSITY MEDICAL SCHOOL, Washington, D. C.: Dr. William Lipscomb Jamison, Manassas.

CENTRAL DISPENSARY AND EMERGENCY HOSPITAL, Washington, D. C.: Dr. Charles Miller Walsh, III, Crewe.

CITY OF ST. LOUIS HOSPITAL, St. Louis, Mo.: Drs. Charles Emerson Liddington, Alexandria; and Harold Vernon Palmer, Erwin, Tenn.

ST. LOUIS CLINIC, St. Louis, Mo.: Dr. Cardwell Camden Nuckols, Charlottesville.

WHEELING HOSPITAL, Wheeling, W. Va.: Dr. King Arcy Jamis, Blacksburg.

SWEDISH HOSPITAL, Seattle, Wash.: Dr. Marion Cooper Lindel, Raymond, Wash.

BAYLOR UNIVERSITY HOSPITAL, Baylor, Tex.: Dr. Robert E. Lee McNeely, Danville.

NEWARK CITY HOSPITAL, Newark, N. J.: Dr. Howard Everett Medinets, Perth Amboy, N. J.

BOSTON CITY HOSPITAL, Boston, Mass.: Dr. Henry Clarkson Meredith, Jr., Norfolk.

EMORY UNIVERSITY HOSPITAL, Emory, Ga.: Dr. John Langdon Moss, Richmond.

UNIVERSITY OF IOWA HOSPITAL, Iowa City, Ia.: Dr. Robert William Sjogren, Blacksburg.

Dr. John W. H. Morgan, Ewing, was also a graduate in this class.

MEDICAL COLLEGE OF VIRGINIA

The one hundred sixth Commencement Exercises of the College were held on December 18th at The Mosque. The Commencement Address was given by John Temple Graves, Litt.B., D.C.L. This year there were seventy-four graduates in medicine; twenty-six in dentistry; and nine in pharmacy.

The following are graduates in medicine:

- DAVID DEXTER ABELOFF, Richmond.
- *JOHN STANARD ARCHER, JR., Richmond.
- RICHARD ALBERT BAGBY, Richmond.
- †WILBUR JAMES BAGGS, JR., Richmond.
- HOWARD EUGENE BALDINI, Union City, N. J.
- *ROBERT HARDY BARNES, JR., Richmond.
- *ROBERT PAYNE BECKWITH, JR., Roanoke Rapids, N. C.
- *PAUL EDGAR BRADY, Newark, Ohio.
- ALBERT COMPTON BRODERS, JR., Rochester, Minn.
- MARY TOM BUNTING, Portsmouth.
- *ELLSWORTH FERRELL CALF, Charleston, W. Va.
- *WAYNE CALHOON CAMPBELL, Chester, W. Va.
- *FAY ASHTON CARMINES, Odd.
- ALIZE COLE, Chilhowie.
- *WILLIAM HENRY COX, Suffolk.
- *WALTER FRANK DAUGHTREY, JR., Holland.
- *JAMES JEFFERSON DAVIS, Connelly Springs, N. C.
- *WIRT LEE DAVIS, JR., Darlington, S. C.
- *GEORGE HENDERSON LEE DILLARD, Richmond.
- *MILTON ENDE, Petersburg.
- *HENRY EDWIN ERNST, Washington, D. C.
- *WILLIAM WINFREE FARLEY, Richmond.
- *ROBERT HENRY FENNELL, JR., Richmond.
- *FRANK MICHAEL FERRANTE, New York, N. Y.
- GEORGE WASHINGTON FISHBURN, San Diego, Calif.
- IRVING EDWIN FIXEL, Richmond.
- *CHARLES PHILLIP FORD, JR., Richmond.
- *EUGENE FREUNDLICH, Fincastle.
- *JOHN BURTT FULLER, Chester.

†JAMES COFER GALE, Waverly.

- JAMES SIEBERT GAMBLE, Lincolnton, N. C.
- *THOMAS VANCE GOODE, JR., Statesville, N. C.
- †MASTON LEWIS GRAY, Huntington, W. Va.
- BROOKE MARGARET GREANEY, Honolulu, Hawaii.
- *WILLIAM NELSON GREEVER, Chilhowie.
- †ROBERT ARNOLD HOFFMAN, Richmond.
- SARAH HULDAH HOOVER, Richmond.
- *GEORGE WATSON JAMES, III, Richmond.
- *ALEXANDER CHARLES JOHNSON, Nogales, Ariz.
- WILLIAM RICHARD KAY, Richmond.
- *FRANK ROBERT KELLY, JR., Richmond.
- †QUENTIN JAMES LEGG, Charleston, W. Va.
- *OTIS EVERETTE LINKOUS, JR., Welch, W. Va.
- *FRED CARLTON MCCALL, Norton.
- *JOHN GRAHAM McCOWN, Rockbridge Baths.
- †JAMES EDWARD MCGEE, JR., Roanoke Rapids, N. C.
- SHIRLEY SUE MARTIN, Huntington, W. Va.
- *VIRGIL ROBERT MAY, JR., Richmond.
- FRANK FERDINAND MERKER, Richmond.
- *WOODROW WILSON MILLS, Kenova, W. Va.
- *WARREN LODOWICK MOORMAN, JR., Salem.
- *ROBERT LORD MORRISON, Staunton.
- MARION BAILEY MURDOCK, Richmond.
- MARGARET BESS OBENSCHAIN, Staunton.
- RUTH O'NEAL, Dunn, N. C.
- *EDWIN JOHNSON OTIS, Ashland, Ky.
- *JOHN MARVIN RATLIFF, JR., Richlands.
- †CHARLES HOLLAND RAWLS, Suffolk.
- *WILLIAM HERVEY REMINE, JR., Richmond.
- *ASHBY TURNER RICHARDS, Harrison.
- *BILL BALLARD RICHMOND, Beckley, W. Va.
- *GEORGE SAMUEL ROWLETT, JR., Richmond.
- *ROBERT SAUL SALISBURY, Richmond.
- *DONALD CONRAD SCHWEIZER, Ramsey, N. J.
- CYRIL IREDELL SEASE, JR., Richmond.
- *CHAUNCEY SHUMAKER, Pomeroy, Ohio.
- IRVING LEONARD SILVERSTEIN, New York, N. Y.
- *HAROLD WILLIAM SNODGRASS, Glade Spring.
- *JOHN HAMMITT SPROLES, Pocahontas.
- JAY EDWIN STOECKEL, Scranton, Pa.
- *GEORGE VRANIAN, Richmond.
- *FRANK ALTON WADE, Roanoke.
- MARK BYRD WILLIAMS, Hampden-Sydney.
- †HAROLD EUGENE WOLFE, Marion.

*Commissioned as First Lieutenant, United States Army, Medical Corps.

†Commissioned as Lieutenant (j. g.), United States Navy, Medical Corps.

Medical Meetings in North Africa.

Shortly after arrival in North Africa, 45th General Hospital, APO 367, c/o Postmaster, N. Y., which was organized from the faculty of the Medical College of Virginia, Richmond, Virginia, began holding medical meetings on the second and fourth Thursdays of each month. Major Guy W. Horsley, formerly Assistant Chief and now Chief of the Surgical Service, conceived the idea of such meetings and has arranged the program for all of them.

The first meeting was held in April in one of the hospital wards, but attendance increased so rapidly that the place of meeting had to be changed at each of three successive meetings to larger quarters until a room was found seating more than 150.

The speakers and subjects have been varied and many of the talks have been on personal experiences of the speakers in many corners of the world. One meeting was devoted entirely to the subject of Removal of Foreign Bodies, another to the Experiences of Medical Officers in the Tunisian Campaign, another to Experiences in the Belgian Congo with Tropical Diseases, and still another to the Experiences of the Commanding Officer of an Infantry Regiment with his Medical Troops in the Sicilian Campaign. Reports have been made on the control of malarial and typhus fevers and on sanitation problems encountered at the time of the invasion of North Africa.

Invitation to attend the meetings was extended to all Medical Officers both in hospitals and attached to troops through notice published in the Daily Bulletin of the Base Section where this hospital is located. They have at all times been well attended, not only by Medical Officers stationed in the vicinity, but also by many from considerable distances.

After the meetings, light and simple refreshments are served and much valuable medical information gathered through informal discussions in small groups.

It is the plan of the 45th General Hospital to continue these meetings which have proven such a great success throughout its stay overseas.

Married.

Dr. S. G. Miller, Covington, and Mrs. Mary Slaughter Kidd, Lynchburg, November 6th. Dr. Miller is a graduate of the Medical College of Virginia.

Dr. James R. Cash, Charlottesville, and Mrs. Mary Frazier Meade at Miquon, Pa., in October.

Dr. Giles Quarles Gilmer, Lebanon, and Miss Sue Wilson, October 18th. Dr. Gilmer is a graduate of the University of Virginia in 1943.

Dr. Horace Milton Dalton, Norton, and Miss Lalla Lee Laffitte, Estill, S. C., August 10th. Dr. Dalton graduated from the University of Virginia in 1939.

Lt. (jg) Joseph Shelton Bower, M.C., of Salem, who was graduated from the University of Virginia in December, and Miss Marietta Bagley McGehee of Lynchburg, December 18. They will be located at Bethesda, Md., where Lt. Bower has been appointed to the Navy Hospital.

Dr. James Edward McGee, Jr., of Roanoke Rapids, N. C., and Miss Jane Katherine Liesfeld of Richmond, December 20. Dr. McGee graduated in December from the Medical College of Virginia.

Dr. Frank Alton Wade of Roanoke and Miss Evelyn Henry Clark of Huntington, W. Va., December 19. Dr. Wade has just graduated from the Medical College of Virginia and Mrs. Wade was in the junior class in medicine.

Dr. Marion Bailey Murdock and Miss Katherine Clay Mallory, both of Richmond, December 21st. Dr. Murdock is also a member of the December class of the Medical College of Virginia.

Dr. Maston Lewis Gray of Huntington, W. Va., who graduated from the Medical College of Virginia in December, and Miss Roberta C. Shaw, of the senior class of nurses at the Medical College of Virginia Hospitals, December 19.

The Seaboard Medical Association of Virginia and North Carolina

Held its annual meeting in Richmond, November 30, through December 2, under the presidency of Dr. C. Lydon Harrell of Norfolk. There was an attendance of approximately one hundred and fifty, and many technical exhibits were on display. A number of interesting papers brought forth much discussion. The President's evening was on Wednesday, the first, at which time a dinner followed a cocktail party.

Officers elected for the ensuing year are: President, Dr. M. A. Pittman of Wilson, N. C.; vice-presidents, Dr. F. Ivan Steele of Windsor, Va., Dr. G. G. Dixon of Ayden, N. C., Dr. Robert H. Wright of Phoebus, Va., and Dr. I. A. Ward of Hertford,

N. C. Dr. Clarence Porter Jones of Newport News was re-elected secretary-treasurer, a position he has held for many years. It was voted to hold the 1944 convention in Wilson, N. C.

Dr. J. B. Fisher Honored.

On November the 26th, a number of people gathered at Midlothian, from that vicinity and the surrounding counties, and gave a party in honor of Dr. J. B. Fisher on the fiftieth anniversary of his locating in that community for the practice of medicine. Dr. Fisher has not only been a leading citizen of his community but has taken an active part in medical and political affairs of the State.

News from the University of Virginia, Department of Medicine.

On November 12, the Virginia Alpha Chapter of Alpha Omega Alpha presented Major-General David N. W. Grant, Flight Surgeon of the Army Air Force, as the speaker for their annual initiation program. His subject was "Problems in Aviation Medicine".

Dr. Herbert C. Clark of the Gorgas Memorial Institute, representing the National Research Council, gave two lectures to the student body and staff on November 19. The subjects for these lectures were, "The Age Level for the Peak of Acquired Immunity to Malaria as Reflected by Labor Forces"; and, "The Distribution and Complication of Amoebic Lesions Found in 186 Post-mortem Exams".

Dr. Robert V. Funsten attended a meeting of Orthopedic Specialists in Dallas, Texas, November 12th through 14th, to study treatments of poliomyelitis.

On November 22nd, Dr. Fred W. Stewart, Pathologist of Memorial Hospital for the Treatment of Cancer and Allied Diseases in New York, gave the Phi Beta Pi lecture on "The Relation of Trauma to Malignant Tumors".

On November 26th, Dr. C. J. Frankel gave a lecture on "Functional Backache" and on November 26th, Drs. W. E. Bray and T. S. Englar lectured on "Dysenteries" at Fort Belvoir, Virginia.

On December 2nd, Dr. Robert V. Funsten gave a lecture on "Fractures" and Dr. David C. Wilson lectured on "Psychoneurosis, Maladjustment, Neuropsychiatry" on December 16th at the U. S. Naval Hospital and Naval Academy Dispensary, Annapolis, Maryland.

The Richmond Society of Ophthalmology & Otorhinolaryngology

Held its annual meeting at the Commonwealth Club, Richmond, at which time the following were elected as officers for the new year: President and chairman, Dr. Peter N. Pastore; vice-president, Dr. Maynard P. Smith; and secretary-treasurer, Dr. Clifford A. Folkes.

The Upjohn Company,

Kalamazoo, Mich., following a special meeting of its Board of Directors on December 11, announced two important changes: Mr. C. V. Patterson, vice-president and director of sales, was made vice-president and director of production, and Mr. E. H. Shellack, general sales manager, was elected to the board of directors and made vice-president and director of sales. Changes at this time were brought about by the untimely death of Dr. Harold S. Adams, who was recently elected vice-president and director of production.

Dr. Walter J. Otis,

An alumnus of the Medical College of Virginia and member of the Medical Society of Virginia, who has been practicing for a number of years in New Orleans, has been re-appointed a member of the Committee on Military Psychiatry of the American Psychiatric Association, and has also been asked to serve on the Faculty of War-Time Graduate Medical Meetings in the Division of Psychiatry. His duties will be largely confined to Region No. 12, which has been assigned to the State of Louisiana.

Diabetic Identification Tags.

At the suggestion of the Medical Division of the U. S. Office of Civilian Defense, to prevent dangerous delay in diagnosis and to insure proper treatment during unconsciousness or coma, Eli Lilly and Company, Indianapolis 6, Indiana, in co-operation with the American Diabetes Association, will provide metallic identification tags to be worn by diabetic patients or carried in the pocket. The inscription reads "DIABETIC, If Ill Call PHYSICIAN." No advertising of any sort appears on the tags, which will be supplied to the medical profession on request.

Gen. Magee Heads New War Medical Information Office.

Major General James Carre Magee, Medical Corps, United States Army, retired, has been named

executive officer of the information service of the division of medical sciences of the National Research Council and assumed office as of December 1. Gen. Magee will devote full time to the organization of a central office in the National Research Council which will collect medical reports and records, widely dealing with military medical practice, civilian practice as affected by the war, medical education and research and the distribution of diseases. This material, so far as military necessities permit, will be made available by publications, summaries and notes.

This service has been established by the Council under the recent grant of the Johnson & Johnson Research Foundation of New Brunswick, N. J., by which \$75,000 was made available for this work.

General Magee has spent his entire professional life in the medical service of the Army, and was recently awarded the Distinguished Service Medal for outstanding services as Surgeon General.

Dr. James C. LeFon,

Now serving as captain in the medical corps with the Fifth Army in Italy, has been wounded twice while performing duties on the front and has been awarded the Purple Heart and also the Oak Leaf Cluster. After his second hospitalization, he has again returned to the front.

Dr. R. Finley Gayle,

Richmond, was elected president of the board of directors of the Country Club of Virginia for the coming year, at its annual meeting on December the 2nd.

Dr. John Bell Williams, business manager of McGuire Clinic, was elected vice-president.

Dr. C. L. Riley,

Winchester, is among those elected to fellowship this Fall in the American College of Surgeons. He is a lieutenant in the U. S. Naval Reserves and is at present stationed in Richmond with the Naval Procurement Service.

The State Hospital Board

Announces that Dr. A. D. Hutton, for sometime an assistant physician at Southwestern State Hospital, has accepted the position temporarily as acting superintendent at the State Colony for Epileptics and Feeble-minded, effective January 1. He succeeds Dr. G. B. Arnold, recently resigned to enter private practice in Lynchburg.

Dr. J. W. Freed of the Western State Hospital has been appointed acting clinical director at that institution.

Arrangements have been made to give a three months' course in psychiatry at the Eastern State Hospital to groups of nurses in the U. S. Cadet Nurse Corps training at general hospitals.

Announcement.

Effective January 1, 1944, the executive office of the American Board of Ophthalmology will be located at P. O. Box 1940, Portland 2, Maine. All Board correspondence should be sent to this new address.

Officers for 1944 are: Chairman, Dr. John Green of St. Louis; vice-chairman, Dr. Frederick C. Cordes of San Francisco; secretary-treasurer, Dr. S. Judd Beach of Portland, Maine; assistant secretary, Dr. Theodore L. Terry of Boston.

The 1944 examinations will be held in New York City on June 3rd and 4th, and in Chicago on October 5th, 6th and 7th.

"The Seven Ages of the Physician".

A tribute has been paid to the medical profession by Ciba Pharmaceutical Products, Inc., through Ciba's sponsorship of a series of paintings, "The Seven Ages of the Physician". The paintings which were executed by James Chapin, distinguished painter, symbolize the idealism of the men who devote their lives to the science of healing. Each of the seven paintings represents a crucial phase in the development of the physician, from infancy to old age. The paintings were shown at the Military Surgeon Convention in Philadelphia, recently, and were on exhibition at 711 Fifth Avenue, New York City, from December 20 to December 31.

Dr. James Q. Gant,

Class of '35, Medical College of Virginia, has recently been made a diplomate of the American Board of Dermatology and Syphilology. Dr. Gant is now Surgeon with the United States Public Health Service where he has for the past three years been associated with the Section of Dermatoses Investigations of the National Institute of Health at Bethesda, Maryland.

Promotions in the Service.

Promotions of Virginia doctors in the Service which have been noted since last month are:

Dr. Thomas A. Gibson of Winchester to lieutenant colonel.

Dr. John Edward Fissel, Jr., of Newport News to captain.

Dr. Benjamin Milton Kagan of Richmond to captain.

Dr. Bernard Katzen of Roanoke to captain.

Dr. James Volpe, Jr., of Jonesville to captain.

War-Time Graduate Medical Meetings.

A program on War-Time Graduate Medical Meetings has been worked out by the American Medical Association, the American College of Physicians, and the American College of Surgeons. This covers the period from October 4 through January 28, 1944. There are eleven hospitals at which these lectures are being given. January programs for Regional Zone Number Five are as follows:: Camp Lee, Virginia: 7th—Psychoneurosis, Maladjustment Neuropsychiatry by Dr. O. B. Darden, Associate Professor of Neuropsychiatry, Medical College of Virginia; 14th—Dysenteries by Dr. J. H. Scherer, Assistant Professor of Medicine, Medical College of Virginia; 21st—Newer Drugs and their Uses in Practice by Dr. Harvey B. Haag, Professor of Pharmacology, Medical College of Virginia; 28th—Diagnosis and Treatment of Contagious Diseases by Dr. Harry Walker, Associate Professor of Medicine, Medical College of Virginia. United States Naval Hospital and Academy Dispensary, Annapolis, Md.; 21st—Psychoneurosis Among the Armed Forces by Dr. Riley H. Guthrie, Professor of Clinical Psychiatry, Georgetown University School of Medicine. The lectures are held from 3:00 to 5:00 P. M.

Dr. Elbyrne G. Gill,

Roanoke, was elected secretary for the coming year, of the Eye, Ear, Nose and Throat Section of the Southern Medical Association at its recent meeting in Cincinnati.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

Curie, Eve—Journey among warriors.

Hector, Lein and Scouten—Electronic physics.

Helion, Jean—They shall not have me.

Ingersoll and Martin—Laboratory manual of physics.

Medical Research Council—Aids to investigation to peripheral nerve endings.

Scoville, Powers and Crossen—The art of compounds. 7th ed.

Sherman, H. C.—Science of nutrition.

Taylor, Watson and Howe—General physics for laboratory.

Webster's Biographical Dictionary.

Zondek and Sulman—The antigonadotropic factor with consideration of the antihormone problem.

For Sale—

Used portable Hindle string electrocardiograph in good condition. Price \$150.00.

Also, Used electric centrifuge. Price \$10.00.

Address "Electro", care this journal, 1200 East Clay Street, Richmond 19. (*Adv.*)

Location Wanted

In Virginia, by physician, aged 61, excellent health, where community is in need of medical services. Address "C. W. R.", care this journal, 1200 East Clay Street, Richmond 19. (*Adv.*)

For Sale—

A General Electric X-ray Machine, guaranteed in good order. Address Dr. J. W. D. Haynes, Mathews, Va. (*Adv.*)

Obituaries

Dr. Charles Ernest McNiel,

Well known physician of Pennington Gap, died October the 26th, after having been in bad health for sometime. He was seventy-one years of age and a graduate in medicine from the Kentucky School of Medicine in Louisville in 1904. He had been a member of the Medical Society of Virginia for twenty-five years. His wife survives him.

Dr. Jesse Green Storie,

Grundy, died October 20th of pneumonia. He was seventy-five years of age and a graduate of the Tennessee Medical College in 1898. Dr. Storie had been a member of the Medical Society of Virginia for thirty-seven years.

Dr. Vance Monroe Cox,

Bristol, died October 15th of heart disease. He was sixty-three years of age and received his medical degree from the University of Nashville in 1909. Dr. Cox served as medical examiner for the induction center at Abingdon and was on the staff of the King's Mountain Memorial Hospital. He had been a member of the Medical Society of Virginia for thirty-two years.

Dr. Charles Lloyd Moore,

Retired physician of Charlottesville, died December 8th, after a long illness. He was a native of Richmond and 68 years of age. After graduation in medicine from the former University College of Medicine in Richmond, he practiced for a number of years in West Virginia. Dr. Moore was a captain in the medical corps of the Army during World War I. His wife survives him.

Resolutions on Dr. Wright Clarkson.

The Virginia Radiological Society desires to enter in its permanent records the following resolutions on the death of one of its most esteemed members, Dr. Wright Clarkson. These resolutions are an inadequate but sincere tribute to one whose memory will long remain in the hearts and minds of his many friends and colleagues:

WHEREAS God in His infinite wisdom has removed from our midst Dr. Wright Clarkson in the fifty-fourth year of his life;

BE IT RESOLVED that the Virginia Radiological Society has lost one of its most valued and active members, a man whose loyal devotion to his profession and colleagues exemplified those enviable traits of character admired by all. As its President at the time of his death and as its founder and staunch supporter, the Virginia Radiological Society reverently mourns his passing and pays tribute to his memory.

BE IT RESOLVED that during the past thirty years he has faithfully served his profession and his community with unselfish devotion, forgetful of the physical and financial sacrifices involved. Rich and poor alike found a ready welcome in his office. Financial considerations never influence the care given his patients. Although burdened with a large practice which required spending many hours in his office, beyond those reasonably expected, he always found time to devote to church and civic duties.

BE IT RESOLVED that his ability as an organizer and leader contributed much to medicine as a whole and in particular to that in his State and community. He tenaciously fought to uphold high principles and ethics of medical practice and any errors committed were of judgment and not of heart. His contributions to medical literature are numerous but perhaps he accomplished even more by his tireless efforts to organize and improve medical groups for the betterment of his colleagues and the patients they served. He was founder of the Virginia Radiological Society, the Fourth District Medical Society (a component part of the Medical Society of Virginia), and the Virginia Cancer Foundation, the first organization of this kind in America. He was a member of many medical societies, a number of which he served faithfully and over long periods of time as a member of their various committees.

BE IT RESOLVED that he served his country faithfully

not only in peace but in two periods of conflict when the ideals and principles for which he lived and worked were challenged. Soon after the United States entered World War I he joined the Medical Corps and became Chief of the X-ray Service of General Hospital 41. For several years before the present conflict he held a reserve commission in the Navy, and, while never called to active duty, he devoted much time and energy to the Navy as a Reserve Officer.

BE IT FINALLY RESOLVED that all members of the Virginia Radiological Society extend their heartfelt sympathy to his family in their bereavement, that we have lost a faithful friend and colleague whose memory we shall reverently cherish, and that these resolutions be made a permanent record on the pages of the Society proceedings.

Respectfully submitted,

ALLEN BARKER, *Chairman*
V. W. ARCHER
E. LATANE FLANAGAN

Resolutions on Dr. Frederick C. Rinker.

In the untimely death of Fred Rinker, Norfolk and the State have lost one of the best physicians, and his many patients have lost one of their best friends. Although an internist, he possessed many of the qualities of the old family doctor, which he no doubt absorbed from his father.

Dr. Rinker was born in Upperville, Virginia, on May 30, 1885. He received his early education in Upperville, then entered Roanoke College, where he obtained a B. A. degree. He entered the University of Virginia Medical School in 1907 and four years later received his medical degree. He spent 18 months at the Philadelphia Polyclinic Hospital and was an assistant physician for a year at the Pennsylvania Hospital for Mental Diseases. In 1914 he went to the University of Wisconsin as Instructor in Medicine and later was appointed Associate Professor. During World War I he was commissioned a First Lieutenant in the Medical Corps, and assigned to the University of Wisconsin to care for the health of the students. After the war, in 1919 he was invited to come to Norfolk by the late Dr. Southgate Leigh and joined the Sarah Leigh Clinic.

Dr. Rinker was a member of the Medical Society of Virginia, the American Medical Association, and at his death was President-Elect of the Norfolk County Medical Society. He was one of the older Fellows of the American College of Physicians, and was a Diplomate of the American Board of Internal Medicine.

He will be sorely missed by the Norfolk County Medical Society in which he was much interested and frequently contributed to its scientific sessions. It is with sincere sorrow that we pay this last tribute to our fellow member.

Committee:

SOUTHGATE LEIGH, JR.
STANLEY H. GRAVES
FRANK H. REDWOOD, *Chairman*

FOR HOSPITALIZED PATIENTS

DAILY HOSPITAL RECORD

Name John Doe Room 302 Bed 4

Attending Dr. Dr. Smith Internae Johnstone Date 9/10/43

	TEMPERATURE CHART											
	A			M			P			E		
	4	8	12	4	8	12	4	8	12	4	8	12
TEMP.	101	102	103	104	105	104	103	102	101	100	99	98
PULSE	80	82	84	86	88	90	91	92	93	94	95	96
RES.	21	22	23	24	25	26	27	28	29	30	31	32
STOOL												
URINE												

Progress Notes: admission of once a week
no more than 100 cc. per day

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Virginia

MEDICAL MONTHLY

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February 1944



**"A MAN OF
FEW WORDS
AND FEWER
MINUTES—THAT'S
MY DOCTOR!"**



"H E BALKS more than ever these days at doing things the hard way, the wordy way, the long way.

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R.T.G. U. S. PAT. OFF.

Virginia Medical Monthly

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RICHMOND, VA., FEBRUARY, 1944

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Guest Editorial

Planned Parenthood

PROTECTION of the health of mothers and children is a vital and essential factor in the general health program of our Nation. It is not necessary to elaborate this statement because doctors know that the keystone in the arch of preventive medicine is, as a rule, the health of mothers. Notwithstanding the improvements in obstetric practice, there are still a large number of deaths in childbearing because many women are unfit subjects for pregnancy as the result of disease processes. Inadvisable pregnancies also cause a great wastage of potential citizens, about 140,000 babies born dead or dying each year before they are one month old. According to conservative authorities one third of these stillbirths and neo-natal deaths could have been avoided if every mother had received and carried out adequate and complete maternal care during her pregnancies, and had been advised by a doctor how pregnancies could have been delayed or avoided if contraindicated.

The responsibility of doctors to attempt to control the mechanism of conception has been recognized by the action of the American Medical Association and by many State Medical Societies, including that of Virginia. The Medical Society of Virginia in 1942 resolved to "encourage private practitioners, and the State Health Department to accept responsibility for giving information relating to the prevention of pregnancy to those patients for whom the physician believes contraceptive procedures to be indicated for medical reasons".

A guest editorial in this Journal last February presented a list of six categories of contraindications for pregnancy, and emphasized that only the doctor has at his disposal the means of controlling conception safely and effectively. The list of reasons for contraceptive advice represented the opinions of leading doctors, mostly obstetricians and gynecologists, in thirty-two states. In addition to the well recognized contraindications due to organic and hereditary diseases, one of the categories was "Women who have given birth to an infant within the past two years or who have had an abortion within the previous year".

Following this suggested procedure results in child spacing, which means the planning of each conception and pregnancy with a view to the best time and season for mother and child. The average normal mother requires a minimum of twelve to eighteen months interval between the birth of one baby and the conception of the next.

Even with a healthy mother and a sound inheritance of bodily and mental endowment on both sides, too frequent and too numerous pregnancies are to be avoided, as they undermine the mother's health and prevent her from giving adequate care to her living children. When the mother is not entirely well, and the endowment not of the best, spacing and limitations are the more necessary.

It is obvious that the time to give women instruction on avoiding pregnancy for medical reasons is before she becomes pregnant or during the period of post-partum care. Such information thus becomes a part of a complete maternal care program of six phases: premarital examination, preconceptional advice, prenatal care, delivery service, post-partum check-up and child spacing service. If this program is followed, and women are helped to plan their families so as to have children when they are in the best possible physical condition, the stability of the home is maintained, and the birth of unwanted children is avoided. These unwanted pregnancies are responsible for the high number of abortions. Twenty-five to thirty-three per cent of all the pregnant women who die in this country each year die from a pregnancy associated with an abortion. Many careful studies show that about 85 per cent of abortions occur in married women who already have several children. How much more sensible it is to give such women advice to enable them to avoid these pregnancies, than to suffer the risk to life and health, and possible future sterility caused by spontaneous or induced abortions.

The philosophy behind the present planned parenthood program is not to limit the number of children born, but to increase the number of babies born of healthy mothers; babies that have a better chance of survival. Safe means must be offered to women who are ill, to the newly delivered mother, and to those couples who breed eugenically undesirable children. Sterile couples must be helped to become fertile.

The medical profession in the United States overwhelmingly supports such a plan and will meet their responsibilities to the best of their ability.

CLAUDE C. PIERCE, M.D.*

EDITOR'S NOTE:

*Dr. Pierce was a Medical Director, United States Public Health Service, until his retirement in 1942 when he became Medical Director of the Planned Parenthood Federation of America.

Back The Attack
By Buying Bonds During The Fourth War Loan
Before February 15

RED CROSS ACTIVITIES AT HOME AND ABROAD*

BEN M. JONES,
Field Director, American Red Cross,
Camp Lee, Virginia.

I wish, first, to acquaint you very briefly with our chapter home service program in order later on to establish the tieup and its relation to Field Director service at home and abroad. There are approximately 10,000 American Red Cross Chapters and branches actively engaged in a home service program in the United States at this time. These chapters, and branches, are located in every state in our union and cover every county. The home service program is actually the link between the service man's family and the son, daughter or husband in Uncle Sam's military forces. The family of every man or woman in the armed forces should keep in close touch with their local American Red Cross chapter or branch so that quick communication can be effected between them and the fighting man when necessary. Let us take a concrete example: Sometimes the family gets upset because they haven't heard from the soldier, or they have heard from him only to learn he is in the military hospital. If the family knows the Red Cross is standing by to help them, their period of suspense is soon over. In a very short time they will be able to learn such facts as the military and medical authorities will divulge regarding the disabled soldier's illness, for on every military post and naval base in this country and in the majority of stations abroad the Red Cross has its workers for this very purpose. The procedure from home to camp is much the same as from camp to home except that it works in reverse. The Red Cross home service worker sends the query to the Red Cross Field Director on duty at the soldier's station, directly if in this country, through National Headquarters if abroad. The Red Cross Field Director locates the man and informs the chapter home service by wire or cable, followed immediately by letter with complete details. This information is relayed to the family and once again the two Red Cross services cooperate in solving the problems involved in the situation. So much in brief for chapter home service.

Let us now step for a moment into Red Cross

services overseas. Accompanying our men and women of the armed forces bound for active duty overseas on foreign soil, is a staff of Red Cross personnel composed of Field Directors, Assistant Field Directors, Medical and Psychiatric social workers, Recreation workers and Club Directors. At this moment there are approximately 4,000 Red Cross people overseas and many of them right up in the combat zones sharing the same hardships and dangers as our troops. According to latest releases Red Cross workers are present in 53 foreign countries. Inasmuch as our clubs, club-mobiles and overall recreation program overseas have received such wide publicity, I shall endeavor to give you a word picture of these more spectacular services. However, I do *not* want you to forget the vital and essential work of our Field Directors and hospital workers whom and whose duties I will discuss at length further along.

There are at this time approximately 80 Red Cross clubs in Great Britain and 44 in North Africa and Sicily. These figures are not accurate due to the fact that our Club program must of necessity be extremely flexible in order to keep pace with our rapidly moving army. Our National Chairman, Norman H. Davis, recently returned from a tour of inspection to England, North Africa and Sicily, states that, and I quote from his experiences:

"I saw a club opening in Polermo and a club closing in Rabat." These clubs range in size and equipment from large deluxe hotels with thousands of beds to simple bomb scarred huts with improvised furniture. A few days after the American occupation of Bizerte, in Tunisia, we had a club running in a partially bombed theater. It was a godsend to our soldiers and sailors because there just wasn't any other place in town for them. Our first club in North Africa was established in an automobile show room in Oran; later we started another club there in a tremendous theater which offered every conceivable facility to our servicemen, including hot showers which are a rarity in North Africa.

"A club like the Rainbow Corner in London is a

*Read before the Seaboard Medical Association of Virginia and North Carolina, at Richmond, Va., December 1, 1943.

colossal operation. An average of about 18,000 boys pass through there every day. I cannot even remember all the services it offers, but I do recall these: movies, snack bars, game rooms, dances, theater tickets, barber shop, pressing and button sewing, first aid, music room, library writing rooms, information desk, etc. It is the meeting place for all men on leave. It is there they spend most of their time.

"In these clubs our Red Cross girls provide a cheerful atmosphere. They are on their feet twelve to sixteen hours daily helping our servicemen to forget the drearier sides of war. If they don't have all the equipment they want or need they get it somewhere, somehow by sheer ingenuity. * * *.

"One of our regional executives told me he wouldn't be afraid to put six of his Red cross girls in the middle of a plowed field and tell them to have a Red Cross club running in ten days.

"They would do it in nine days and have the place full of servicemen he said. They are splendid. Since I have been in this place (the location cannot be mentioned) we have been bombed at least seventy times. I have yet to hear one of our girls whimper or complain.

"The clubmobile program was a logical offshoot of our leave clubs in the larger cities. These traveling clubs are filling a real need in taking Red Cross service to isolated camps and airfields. These converted buses or trucks carry coffee, doughnuts, books, magazines, phonograph records, writing paper, cigarettes and chewing gum. Two or three girls generally operate them. They have to get up at four or five o'clock in the morning to get their coffee and doughnuts ready for a day's visit to camps or airfields. Their arrival at an airfield or camp is a great occasion. The boys cluster around the vehicles and stay talking to the girls and eating (our soldiers seem never to stop eating) until the clubmobile must go on to another station. We have 36 of these "clubs on wheels" in operation in Great Britain and 24 in North Africa and Sicily. Although I haven't heard yet, I have pretty good reason to believe we have some already in operation in Italy. Without revealing military secrets I can say that while I was in a certain North African port, at the time of the invasion of the Italian mainland, I saw several of these girls off on a convoy headed for Italy.

"The demand from army and airforce officers for

more frequent visits of our clubmobiles to their camps and airfields caused us to inaugurate a new service—aeroclubs and campclubs right in the camps or on the airfields. These generally comprise several rooms in a Nisson hut, barracks or tent where Red Cross recreation workers are in attendance. Snack bars, reading and writing rooms and pingpong tables are generally provided. For those soldiers and airmen stationed some distance from a large city these club rooms are their only place of recreation and amusement.

"Another new development has been the establishment of rest homes for aviators who have done a number of bombing missions and need relaxation and rest. We operate these for the Air Force at their request. Red Cross girls provide a cheerful, homelike atmosphere and the airmen do as they please for a week or so or until they are ready to return to active duty. While at these rest homes they wear civilian clothes, and it is amazing how quickly they recover from their fatigue or jitters.

"Most warming to me were the expressions of gratitude from the servicemen themselves. Both in England and North Africa I visited many of our clubs. Whenever the boys found out I was National Chairman of the Red Cross they would come up to me, shake my hand, and tell me how much they appreciated what the Red Cross was doing. How many times I heard exactly the same statement: 'I don't know what we would have done without the Red Cross.'" Thus ends the quotation of our National Chairman, Norman H. Davis, concerning his experiences while on his recent inspection tour abroad.

FIELD DIRECTOR SERVICE

The charter granted by Congress to the American National Red Cross in 1905, includes in its statement of purposes the following: (Fourth article) "to act in matters of voluntary relief and in accord with the military and naval authorities as a medium of communication between the people of the United States of America and their Army and Navy."

Red Cross service to the armed forces began in June, 1916, at the time the National Guard was called into service for duty on the Mexican border. Field Directors were assigned to Army and Naval stations in this country and abroad. Medical social workers and recreation assistants were added to the staff of army and naval hospitals. In June, 1941,

Service to the Armed Forces was established, under that title, and on December 8, 1941, with the declaration of the existence of a state of War with Japan and with Germany and Italy on December 11, 1941, Red Cross went on a wartime footing. Army Regulation 850-75 states that "Red Cross conducts a program of Home Service for the able-bodied, and hospital and social service for patients."

Under these regulations the War and Navy Departments looked to the American Red Cross to furnish services of a type I shall enumerate in part only, inasmuch as they are so great in number and the ramifications of these basic services have proven to be so many that I could almost go on naming them *ad infinitum*. Except where I otherwise indicate, hereafter, when I refer to Field Director Service, I am including services rendered in this country as well as abroad:

1. Field Directors arrange for furnishing relief for families of service men who are in distress. Many of the men inducted into the armed forces have left at home members of their family who have been wholly or partially dependent upon them for support in civilian life. A great many of these dependents, of course, have prepared themselves financially for the eventuality of the call to service of the family head. However, their reservoir of financial preparedness is soon depleted to the extent that some are faced with imminent destitution. The soldier receives a letter from his family informing him of their critical financial condition. You can well imagine the effect of this news upon the soldier involved. His morale is completely broken. His training period, in fact his entire attitude toward soldiering, is drastically affected. He is possibly thinking in terms of going AWOL, and, of course, if he chooses this course his entire military career will be seriously jeopardized. However, instead, he contacts his Commanding Officer and informs him of his family's predicament, and *this* is the point where the American Red Cross Field Director steps into the picture. The Commanding Officer immediately contacts the Field Director who is stationed right with the troops and he, without delay, notifies the home chapter having jurisdiction over the soldier's home town and family, either by wire, cable or letter. (If overseas, the channel of course is through National Headquarters to Chapter.) The Chapter, upon receipt of the message, immediately

visits the family and renders the necessary aid. The Field Director is in return notified of the chapter's action, with complete details as to how the emergent need was met, including what plans have been made by home service for the welfare of the soldier's family in the future. The net result of this cooperation between Field Director and chapter is first, a greater feeling of security within the family itself, because they now know Red Cross is standing by to assist them in any emergency, and, second, a better and more efficient soldier for Uncle Sam's army, with bolstered morale and complete assurance that his family is well cared for in his absence.

There is probably a question in your minds at this time as to what effect the provisions contained in the Dependents' Allowance Act has on cases such as I have just mentioned. The answer is, that in many cases the allowance check has certainly met very adequately the needs of small family groups. However, many of the larger family groups need financial assistance in supplement to the allowance check. Also, between the date of filing application for family allowance by the soldier or his dependent, and the date of actual receipt of the first check by the dependent, there is often a delay of 60 to 90 days. The time element therefore creates emergent situations that are being met by the Red Cross chapter.

2. Field Directors help to locate men in the service for inquiring families.

3. Field Directors assist in locating families of service men.

4. We encourage communication between service men and their families.

5. We assist in solving business problems of service men and their families.

6. Field Directors investigate home conditions at the request of Commanding Officers and secure confidential information needed in considering questions of discharge, relief from active duty and furlough.

7. Lastly, and one of our biggest jobs; we make loans to service men and women to enable them to return home on account of distress, sickness or death in the immediate family where the soldier or his family is without sufficient funds; such loans to be made only upon approval of the Commanding Officer and after proper verification, through the Red Cross chapter, has been made.

Let us take a concrete example illustrating this last service on emergency furloughs and Red Cross loans. Pvt. John Smith receives a wire from home informing him that his mother is critically ill and that his presence is needed at once. Pvt. Smith so informs his Commanding Officer who in turn advises the Field Director of all pertinent facts including name of person involved, complete address, relationship and if possible the name of the attending physician. The Field Director relays this information to the appropriate chapter for verification by wire or other means. Red Cross Home Service contacts the family and physician, for diagnosis, prognosis and doctor's recommendation. The facts in the case are wired back to the Field Director who forwards the information to the soldier's Commanding Officer. If the soldier's presence has been recommended, furlough papers are drawn up, and if the soldier is without funds for round trip transportation and subsistence, he is sent with his furlough to the Field Director's office for an emergency Red Cross loan. There is *no interest* on this loan and *no collateral asked*. The soldier makes his *own* arrangements for repaying the loan and is *never* dunned. No deductions from the soldier's pay are permitted. In the navy they do permit pay deductions. We also have the prerogative of making an outright grant to the soldier for which no repayment is expected.

The making of a grant, rather than a loan to the soldier, would depend of course on the results of the interview between the soldier and the Field Director. In other words, will the soldier be financially able to repay a loan without working a hardship on his family and himself? We must, therefore, determine what his base pay is and what deductions are made therefrom. Each case is decided on an individual basis. In the final analysis, however, the soldier has the right to state whether or not he desires a loan or grant, even though in making a *loan*, the Field Director is pretty positive that at sometime in the near future he will have to write the loan off as uncollectible. This we believe is sound case work.*

As I mentioned elsewhere, the task of enumerating all types of Field Director service rendered

would be an impossible one. However, I do want to mention two factual case stories, one of which occurred at Camp Lee, and the other at a far distant locale.

Nearly two years ago, a soldier came to me for counsel concerning a problem of grave importance to him as well as to his family. Very briefly, this soldier was to be given a "blue" discharge (discharge without honor) for fraudulent enlistment, by order of the Secretary of War. The execution of this order was to take place three days hence. The charge of fraudulent enlistment was brought against this soldier because he had enlisted in the United States army while on parole from one of the largest penal institutions in this country. Suffice it is to say, this soldier was one of the *best* men in his regiment and had a *perfect* service record. These facts were attested to by his Commanding Officer, four subordinate officers and his Chaplain. Briefing this case story still further, an appointment was made by the Field Director for an interview with Governor Darden of the State of Virginia, at which time the facts in the case were presented to him and the soldier was interrogated by Governor Darden personally. With the governor's assistance and after many, many details had been worked out by the Red Cross Field Director, I received word by telephone on the morning the soldier was to be discharged to the effect that the discharge order had been *rescinded* by the military authorities and the soldier *would remain* in the *Army of the United States*. To say merely that this was a happy solution for all concerned in the case would be a colossal understatement. Besides illustrating with this case story the variety of requests that are made of the Red Cross Field Director, it is, I believe, concrete evidence of the fact that the American Red Cross is a *democratic organization* of all the *people* of this *great country* of ours. That Governor Darden gave so untiringly and unselfishly of his time and effort to help bring this case to successful conclusion, is proof, I believe, for this assertion.

My second story is rather a humorous incident that occurred on an island of the South Pacific group. Our troops had forced a landing and established a beach head on this particular Jap held base. A Red Cross Field Director accompanied the landing party, taking with him many of the comfort articles Red Cross distributes to our troops in com-

*At this point, the author digressed to mention certain statistics at Camp Lee; number Assistant Field Directors, number communications, number loans and funds outstanding, number cases, and per cent of collections, etc.

bat zones. Somehow, this Field Director shortly after landing, found himself alone in the jungle and quite lost. After a short period of wandering about, he encountered a group of our troops out on patrol. The ensuing conversation between the Field Director and the soldiers went something like this: Field Director, "Can you fellows tell me how far ahead our front lines are?" The answer came back, "Hell, Bud, you're *two miles ahead* of 'em." (The Field Director joined the patrol).

The Red Cross work at the Station Hospital is an integral part of the overall Field Director's program within a post or station and renders its services to patients only. The Red Cross staff at the Station Hospital is under the direct supervision of an Assistant Field Director (usually a woman) and is composed of Medical Social Workers, Psychiatric Social Workers, a case supervisor and a head recreation worker with trained assistants. The Assistant Field Director is administratively responsible to the Field Director in ablebodied headquarters for the satisfactory functioning of the hospital program.

For purposes of distinction only, I shall divide the Red Cross Station Hospital services into two major parts, and they are: Social Service and Recreation. They are inter-dependent and complement each other.

Briefly, the Red Cross Social Service program consists of securing social and medical histories on soldier patients from the various Red Cross Chapter Home Service Departments. These histories are requested by the Military Medical Authorities in order to assist them in diagnosis, treatment and disposition of certain cases. A great deal of time is expended by the Red Cross social workers in interviewing soldiers concerning their many problems. These discussions between social worker and soldier tend to help the patient to cope with his problems and assist him toward a satisfactory adjustment of his real or imaginary ills. Another phase of the Social Service program within the station hospital is the assistance rendered soldiers who are awaiting Certificates of Disability Discharge (C. D. D's.) insofar as filling out the various forms for pension or other governmental claims and insurance are concerned. An effort is made by the Red Cross social worker to interview every soldier who is given a C. D. D. Also at this time the soldier is made aware of the Red Cross Chapter assistance that is available

to him after he has returned to civilian life, which includes informing the soldier and assisting him in entering into the State or Federal rehabilitation program if eligible; loans for convalescent and therapeutic purposes are made by the Assistant Field Director in the Station Hospital.

A recreation program, approved by the military, is sustained within the station hospital every day by the American Red Cross.

The program for the ambulatory patients takes place in the Red Cross recreation hall within the station hospital. These programs are planned and executed by the Red Cross head recreation worker and her assistants. They include such entertainment as regularly scheduled movies (often first releases), holiday parties, bingo games, U. S. O. shows, news analysts, personal appearances of movie stars and nationally known sports figures, etc. For those bed patients who are unable to get to the recreation hall, special "ward programs" are established in which the entertainment is taken directly to the patient. These ward programs incorporate many of the features of the "recreation hall" program I just mentioned, including movies made possible by the transporting of a 16 mm. movie projection machine provided by the American Red Cross. Included in the entire schedule of recreation is a handi-craft program which is very popular with all the patients and under the able instruction of a Red Cross craft person. I cannot close this particular part of the Red Cross program within the station hospital without mentioning the fact that one of the Red Cross nationally known volunteer groups plays a very important role insofar as services rendered to soldier patients is concerned. This volunteer group is known to thousands as the "Gray Lady Corp". Their services are invaluable in rendering personal service to the soldier patients and assisting in the recreation program itself.

Consultation, or Mental Hygiene units, were set up in Army camps and naval stations upon the recognition by the Military Authorities of the need to help the serviceman toward a better adjustment to military service. These units are set up to study and to treat those soldiers who, because of various problems, are making a poor adjustment within their organization. Over a year ago, the first of these units was established, and since then more than twenty-three have been added throughout the

country. These units are set apart from the hospitals under the Headquarters command, or the Classification and Assignment division of training and reception centers.

They are staffed by qualified military personnel, and to each a Red Cross Trained Worker is attached. Each unit is headed by a psychiatrist as the director. The Assistant Director may be either a psychiatrist or psychologist. An allotted number of enlisted personnel are divided into two groups; the interviewers, who are selected on the basis of previous experience and training in social work or psychology, and the clerical staff. The Red Cross Worker is a social worker, usually with psychiatric training and experience.

Methods of referral may differ in units in the various camps. Usually, however, they are through several sources:—Regimental Dispensary Officers, Company Commanders, and the Classification and Assignment Division. The first two sources are the most frequent channel of referral as they have the closest contact with the individual and more opportunity to observe him.

Those cases most frequently referred are soldiers presenting physical complaints who have frequently reported on sick call and for whose ailments no organic basis is found. The soldier who is not able to keep up with the group may be referred. The soldier who is unable to make adjustment to the stress and strain of military service or finds it difficult to get along with the other men in the group may also be referred. Those soldiers who have difficulty in learning by reason of limited mental capacity may be referred for help or for recommendation as to their disposition.

The purposes of the Consultation Unit are twofold—to help the man, and to recommend disposition. Disposition may be of several kinds; those chronic complainers who after a period of study and treatment do not seem to respond may be placed on the hospital waiting list for possible medical discharge. Men may be referred to Special Training Units where the pace is slower. This may be helpful to the soldier in giving him more time to make adjustment. Men with limited mental capacity may be recommended for discharge under Section No. 8. Psycho-therapy is an important function which may result in the man being returned to full duty.

The Red Cross worker's function is to assist in

study and in treatment. In many instances, the psychiatric history obtained through the Home Service Chapter is an important aid in giving a fuller understanding of a man's past adjustment. Frequently the problems of the men center around family and personal situations not directly related to the military service, but causing sufficient anxiety to affect the soldier's adjustment in service. The Red Cross worker is at hand to help the man work out the solution. Here, as elsewhere, Red Cross, through the Home Service, forms the connecting link between the man and his home.

The Red Cross worker participates in the preliminary study of the man prior to the psychiatric interview. He or she also participates in treatment of the mildly disturbed cases upon the recommendation of the psychiatrist and with the men who are to be discharged for inaptitude or because of undesirable habits or traits of character. The Red Cross worker has the responsibility of post discharge planning. Often these men are disturbed because they feel a possible stigma may be attached to the discharge that is given. The Red Cross worker may help them gain some insight into their situation and to plan for the return and readjustment to civilian life. She or he can, again through the Red Cross at home, help to uncover resources at home for their use. In cooperation with Veterans' Administration, each man, if he so wishes, may be assisted in preparing the claim papers for pension and compensation.

The following sentences were taken from actual letters received from the mothers, wives, etc., of men in the service. They were either making or correcting applications for allotments:

"Please find out for certain if my husband is dead, as the man I am living with won't eat or do anything till he nose for sure."

"In accordance with your instructions I have given birth to twins in the enclosed envelope."

"I have already had no clothing for a year and have been regularly visited by the clergy."

"Both sides of my parents is poor and I can't expect nothing from them as my mother has been in bed for one year with the same doctor and won't change."

This, gentlemen, concludes my rather lengthy interpretation of Red Cross Field Director services at

home and abroad. I sincerely hope I have been able to enlighten you insofar as this particular phase of Red Cross service is concerned. If you have any questions I will endeavor to answer them to the best

of my ability.

On behalf of the American Red Cross I thank you for the privilege of appearing before you, and wish you all a very successful conference.

Feeding Through Wounds Saves Red Soldiers.

Lives of about 10 out of every 100 Russian soldiers with belly wounds have been saved by feeding a rich egg-nog through the wound while the patient was on the operating table at the battalion field hospital, P. A. Panikov, surgeon-in-chief of a medico-sanitary battalion of the Red Army, reports.

Details of the methods, originally reported in the Soviet medical journal, *Khirurgia* will be available to American doctors through a translation appearing in the first issue of a new journal, *American Review of Soviet Medicine*.

The practicing of feeding through the wound was adopted to fight the general weakness which often proved fatal to these wounded soldiers on the second or third day after operation. They had survived the shock of the injury and surgical treatment. Peritonitis, a fundamental cause of death in such cases, had not yet set in or was developing unusually slowly.

The Soviet surgeons were forced to conclude, Dr. Panikov reports, that the weakened resistance of these wounded soldiers "was the result of the stubborn, unyielding battles of the time, battles which did not permit the organism the required rest or allow the soldier to have sufficient nourishment on time. All this was aggravated by the soldier's prolonged stay on ice and snow-covered trenches."

For some time after an abdominal wound and repair operation, the patient can eat little or nothing. So the Soviet surgeons decided to forestall the further weakening effect of this period of forced starvation or semi-starvation by putting some food into the intestines through the wound at the time of operation. The food consisted of almost 13 ounces of milk, about two ounces of sweet butter, two eggs, about two ounces of sugar, a little salt and about two ounces or more of distilled alcohol.

The good effect of this feeding sometimes could be seen before the patient left the operating table. Color returned to the cheeks, the lips became red and warm, and the patients generally fell asleep at the end of the operation. There was much less pain following the operation and the patients usually wanted to eat by the third or fifth day. On the ninth or tenth day, the patients could be evacuated in good condition to regiment field hospitals.

This method reduced the mortality from abdominal wounds to 40 per cent less, where previously it had never been below 50 per cent. The extreme difficulties of transportation, both of wounded soldiers from the front to the battalion field hospitals and of plasma and other medical and surgical supplies from the rear of these hospitals, apparently account for some of the high mortality rate.

—*Science Service.*

PENICILLIN IN THE TREATMENT OF OSTEOMYELITIS AND OTHER INFECTIONS—CASE REPORT*

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Penicillin was discovered by accident in 1929 by Fleming, an Englishman. While doing culture work with staphylococci, he by error contaminated an agar plate. He noticed, to his surprise, the harmful bacteria in one area were killed. After further investigation he found that this area was contaminated with a mold colony—*Penicillium notatum*. There are many kinds of *Penicillium* molds. One type is the *Penicillium glaucum* which is nothing more than common mildew. Fleming's observations were not fully recognized until Dubois of Rockefeller Institute in 1938 announced the discovery of Gramacidin, a similar antibiotic, obtained from the cultures of soil bacilli.¹ After this, Florey and his associates at the University of Oxford became interested and undertook the study of Penicillin. In 1940 they published their results, which claimed this antibacterial substance obtained from mold, *Penicillium notatum*, showed almost no toxicity in animal studies and was active, in high dilution, against a variety of organisms.

In America investigators, working under the auspices of the National Research Council, in Boston, with the help of some of the larger drug firms, have studied and experimented with this drug since 1941. Although the majority of the output has been sent to the armed forces, a limited supply has been made available to civilian doctors who present worthy cases. As a result of this cooperative effort, it is probable that no new drug has ever been more thoroughly studied, and the results tabulated.

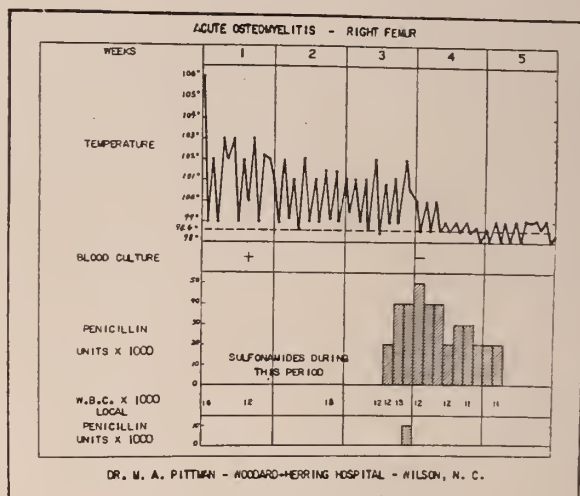
As a therapeutic agent, Penicillin has two characteristics not shared by any other drug. First, great activity against bacteria and low toxicity to the tissue cells. It is claimed that its bacteriostatic action is not interfered with by the presence of body fluids or pus.² Its action is bactericidal under certain conditions, but in concentrations used therapeutically, it is primarily bacteriostatic.

It is admitted by authorities that this drug is the most effective agent so far discovered against the

heretofore unconquered *Staphylococcus*. Cases have been reported where the sulfonamides have failed and the outlook considered hopeless, yet they recovered when given Penicillin. The *Streptococcus* and *pneumococcus* also yielded to this drug. Gram negative organisms, excepting gonococci and meningococci, are resistant to it.¹

In sharp contrast to the sulfonamides, little or no toxic symptoms have followed its administration, even in large doses over a long period of time.

A report by the Committee on Chemotherapeutic and other Agents of the National Research Council, under the chairmanship of Dr. Chester S. Keefer,



summarizes results of Penicillin treatment of 500 patients. Included were ninety-one cases of *Staphylococcus aureus* bacteremia. Of these, fifty-four patients recovered, or improved to such an extent that recovery followed later; thirty-four patients died; in the remaining three, Penicillin had no effect. The case fatality rate—27 per cent—is considered remarkably low because the over-all rate in such a group not receiving Penicillin or sulfonamide treatment is usually about 85 per cent. Moreover, many of the patients were treated late in the course of the disease or received an amount of Penicillin considered inadequate according to present standards of dosage. The cases in which recovery occurred included acute osteomyelitis, bacteremia without obvi-

*Read at the meeting of the Seaboard Medical Association of Virginia and North Carolina in Richmond, Va., November 30-December 2, 1943.

ous portal of entry, pneumonia, epidural abscess, burns, cavernous sinus thrombosis, and meningitis.³

Fifty-five patients with staphylococcal osteomyelitis without bacteremia were given Penicillin treatment; forty-eight of these recovered or improved.

Penicillin also proved effective against the hemolytic streptococcus, and demonstrated that it was "another potent weapon" against pneumococcal pneumonia.¹

In gonorrhea, Dr. J. F. Mahoney, of the U. S. Public Health Service, appointed by the committee, treated 129 cases of sulfonamide resistant patients; 125 were symptom free and bacteriologically negative in from 9 to 48 hours after treatment. Treatment used was 20,000 units by the intramuscular route every 3 hours for 8 doses.⁴

Florey and Florey, University of Oxford, collected data on 200 cases treated in English hospitals, where the drug was first developed. The group included 15 cases of severe infection which appeared hopeless after other forms of treatment, such as the sulfonamides, etc., had been used. Only one of the 15 died, a case of endocarditis caused by *Streptococcus viridans*. They state, in cases of bone lesions as osteomyelitis, "The evidence is, that with adequate dosage, it is possible to eliminate all infection, and one may look forward to the time when osteomyelitis treated early will no longer be a surgical condition."²

Penicillin is a yellow powder resembling neosphenamine, prepared in ampules ranging from 5,000 to 100,000 units each. The ampules sent us contained 20,000 units. It is extremely soluble and may be dissolved in small amounts of sterile distilled water or sterile normal saline solution.

There are three methods of administration: intravenous, intramuscular, and topical. The dry powder may be dissolved in sterile normal saline solution in concentrations of 1,000 to 5,000 units per c. c. for direct intravenous injections, through a syringe. It is most commonly used, however, in a greater dilution—25 to 50 units per c. c. for constant intravenous therapy, the diluent being sterile normal saline or 5 per cent glucose solution.

For intramuscular injections the volume should be small, 5,000 units per c. c. of sterile saline solution making the average dose two to four c. c. in volume.³

For topical or local use the dry powder should not be used because it is irritating to wound sur-

faces. It should be dissolved in saline in the strength of 500 units per c. c. This solution may be applied to the surface area, as in burns, or injected intraspinally in meningitis, or into the thorax in empyema.

Dosage: The dose varies according to the infection. The average dose is from 40,000 to 50,000 Oxford units per day. The drug is eliminated rapidly through the kidneys, remaining in the blood stream only from 2 to 4 hours. For this reason repeated intramuscular doses, every 3 to 4 hours or a continuous infusion well diluted, allowing from 30 to 40 drops per minute, should be used.

After the temperature has returned to normal, the dose should be cut to half, and treatment continued for 7 days.³



Fig. 1. The therapeutic possibilities of *Penicillium notatum* were first recognized when it was found that a colony of this mold growing in a culture of staphylococci was surrounded by a clear zone in which bacterial growth was prevented. (1)

CASE REPORT

A white male child, age 11, was admitted to the Woodard-Herring Hospital, Wilson, North Carolina, after an illness of 4 days. He complained of severe pain in region of right femur, high fever, and inability to walk. Past history gotten from parents was essentially negative except that he had suffered from a small boil just above the inner portion of

Figures Nos. 1, 2, 3, 4, 5, 6 and 7 are used by courtesy of E. R. Squibb and Sons, New York.

knee about two weeks previous to admission. This had completely healed. His temperature on admission was 106, pulse 130, respiration 25. The right thigh was slightly swollen and tender. Laboratory studies showed the urine to contain 1 plus albumin, hemoglobin 78 per cent, red blood cells 4,200,000 and white blood cells 16,000. X-ray of femur at this time showed no evidence of pathology. A tentative diagnosis of osteomyelitis was made.

Initial treatment consisted of 1.5 gm. of sulfa-thiazole; then .5 gm. every 4 hours. Diathermy, opiates, and salicylates were given for pain. On the fourth day the blood culture was positive for staphylococcus aureus infection. On the sixth day the thigh was incised and drained. Some pus exuded from soft tissues; the bone appeared firm at



Fig. 2. As an early step in the production of Penicillin, the sterilized liquid medium is poured into sterile one-gallon bottles. (1)

this time. X-ray on the 14th day showed marked degenerative changes of the upper and lower thirds of the right femur. Temperature throughout this period ranged from 99 in the morning to 103 in the afternoon and the child was growing progressively worse in spite of continued sulfonamide therapy, supported by daily infusions of glucose and frequent transfusions. The case appearing hopeless, an effort was made to obtain Penicillin. After much difficulty, we received twenty 20,000 units and began



Fig. 3. The liquid medium is then inoculated with *Penicillium notatum*. (1)

administering the drug on the 19th day. Twenty thousand units were dissolved in 4 c.c. of normal saline, then this solution injected into a vacoliter containing 500 c.c. of normal saline solution. This was given intravenously at the rate of 40 drops per min-



Fig. 4. Several thousand inoculated bottles are incubated at one time in the culture room and allowed to remain at a temperature of 72 degrees to 74 degrees F. for 12 to 14 days. (1)

ute, taking approximately 4 hours for the treatment. During the second 24 hours 40,000 units were given by the same method, allowing 10,000 units to be given at 3 hour intervals. Little or no improvement was noticed until after the third day of treatment. The temperature on the 4th day was subnormal in the morning, and did not go above one hundred during the afternoon for the following two days. A blood culture at this time was negative and there was no odor from the wound. On the 7th, 8th, and 9th days the temperature was practically normal, ranging from 98 in the morning to 99 in the afternoon.



Fig. 5. While stored in the culture room, the surface of the medium gradually becomes covered with a corrugated, green-blue-gray growth with velvety texture. As it grows, the mold produces the powerful antibacterial agent, Penicillin, which diffuses into the liquid beneath. (1)

On the 10th, 11th, and 12th days temperature ranged from subnormal to normal and has not been above 99 since. As the patient became restless and uncomfortable while the intravenous drop method was being used, we changed on the 4th day to the intramuscular route, dissolving 20,000 units in 4 c.c. of normal saline and injecting 2 c.c. or 10,000 units in the child's hip every 4 hours. This method had its advantages. The patient liked it better and the nurse could administer it in the absence of the doctor. It appeared that there was a more noticeable improvement following this method than in the intravenous route.



Fig. 6. The Penicillin is harvested by decantation of the culture. The moldmat is discarded and the filtrate is sent to the Laboratories, where it is chilled, adjusted to the proper pH and extracted. The spent filtrate is discarded. The active filtrate, containing Penicillin, is submitted to further processes of extraction, purification and sterilization. (1)

This case was discharged from the hospital November 25, 1943, and has had no fever now for the past 60 days. X-rays show the upper third, including the head of right femur, partially absorbed with new bone formation in progress. A spica cast was applied 90 days after admission and the child

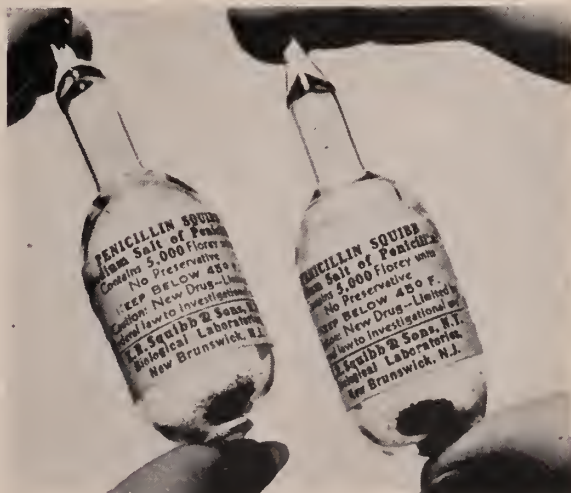


Fig. 7. The end result—when the common mold is exalted to the role of saviour of human lives. (1)

is now able to be wheeled around in comfort. His convalescence will be slow, but his recovery appears certain.



Fig. 8. Marked degenerative changes of upper and lower thirds of right femur. Beginning pathology of upper third left femur.

SUMMARY

1. Penicillin is an antibacterial agent from the common mold, *Penicillium notatum*.

2. It has great activity against bacteria, especially the staphylococcus, streptococcus, pneumococcus, and gonococcus. It also shows low toxicity to the tissue cells, tremendous doses having been given with no untoward effects to the patient.

3. This case, in contrast to other cases of osteomyelitis we have treated, had no noticeable odor from the wound or exudate following the 4th day of treatment with this drug.

4. It can be administered intravenously, intramuscularly, or locally, the latter in the presence of fluids



Fig. 9. Patient in spica cast at time of discharge from hospital.

or pus, without interference with its bacteriostatic action.

5. It is the opinion of our entire staff that had this case received Penicillin early, bone destruction would have been prevented; surgical interference would have been unnecessary, and shorter convalescence could have been expected.

6. Penicillin is not yet available for general use, as the major portion of the present day production is being used in the armed forces.

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PREVENTION OF TETANUS*

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The prevention of tetanus was chosen by me as the subject of my remarks this evening for two reasons: first, because the prevention of tetanus is always an important problem in rural communities, and, second, because I feel the medical profession as a whole has been slow in appreciating the value of active immunization against tetanus, which was introduced in this country by Bergey and Etris in 1933. Although tetanus is an infrequently occurring disease, it has been recognized as a medical entity for many centuries and this is only natural because of its dramatic manifestations and high mortality. Hippocrates described a case as follows:

"Another received an insignificant wound to speak of (for it was not deep) a little below his neck behind from a sharp dart; which being taken out not long after, he was drawn and distorted backwards, as in the opisthotonus. His jaws were also fast'n'd; and, if anything moist was put into his mouth and he attempted to swallow it, it returned again thro' the nose. In other respects he grew worse immediately. The second day he dy'd."

In spite of the antiquity of tetanus, it was not until 1884 that a definite advance was made in the understanding of its etiology. In that year, Carlo and Rattone succeeded in producing tetanus in rabbits by the inoculation of pus from a cutaneous lesion of a human case. Shortly after this, Nicolaier succeeded in producing tetanic symptoms in mice and rabbits by inoculating them with soil, and from the lesions produced at the point of inoculation, Nicolaier secured and described a bacillus which may have been the *Clostridium tetani*, the causative agent of tetanus, but he was unable to isolate it in pure culture.

Kitasato, in 1889, definitely solved the etiological problem by obtaining from cases of tetanus pure cultures of bacilli with which he was able to reproduce the disease in animals. Kitasato succeeded where others had failed, because he used anaerobic methods, and because he eliminated non-spore bearing contaminating organisms by means of heat. The

Clostridium tetani is a spore bearing anaerobic bacillus widely distributed in nature. Its vegetative forms are not more resistant to heat or chemical agents than those of other organisms. Its spores, however, are most resistant. They will resist dry heat at 80°C. for about an hour, and 5% phenol about 12 hours. Protected from sunlight, and other deleterious influences, they may remain viable and virulent for many years. The common habitat of *Clostridium tetani* is the intestinal tract of a large number of herbivorous animals, having been found in this location in horses, cattle, sheep, man, fowl, and various rodents. It is widely distributed in the soil in any region contaminated by human or animal excreta, particularly in barnyards and land fertilized by horse and cow manure.

Repeated studies have shown that it is practically impossible to infect healthy tissue with tetanus spores. For infection to occur, tissue must be devitalized, or some other infection must co-exist.

While any wound may become infected with this organism, there are certain types of wounds in which its growth is more likely to occur. It is more likely to occur in deep wounds where oxygen is excluded—in crushing wounds with devitalization of tissue, in war wounds, in deep puncture wounds, in compound fractures, and wounds into which dirt or other foreign bodies have been carried, especially when these wounds have occurred in regions where the soil is contaminated with animal excreta. It is also apt to occur in superficial wounds that are scabbed over, and where foreign bodies are present, and when infection by other organisms co-exists. It has also developed after such minor wounds as blisters and superficial powder burns, and insect bites which have dirt rubbed into them. Tetanus is seen many times in patients in whom it is impossible to find the lesion harboring the bacillus. Tetanus neonatorum is not uncommon in certain parts of Asia and Africa, due to infection of the umbilical stump. Happily this type has practically disappeared in this country. The disease has resulted from infection of retained post-partum uterine contents, so-called obstetrical tetanus; and many cases have been the

*Read at the regular meeting of the Piedmont Medical Society at Farmington Country Club, Charlottesville, Va., September 17, 1943.

result of attempts at self-induced abortion. It has followed intestinal operations, herniorrhaphies, and particularly hemorrhoidectomies. Its association with hemorrhoidectomies is of importance because it has been demonstrated that a fair percentage of human beings are intestinal carriers of the organisms and some surgeons have advocated the administration of tetanus antitoxin before any operation on the rectum or anus.

A very interesting form of tetanus is cryptogenic tetanus. In this type the initial wound will heal normally, but spores will be retained in the wound and after subsequent operation in this region will vegetate and multiply, and the patient will develop tetanus.

Another type of tetanus which merits special consideration is that which follows vaccination against smallpox. While these cases are not very numerous, they are of considerable importance, for they furnish valuable ammunition for the agitators against vaccination. In these cases, the average time elapsing between vaccination and the onset of symptoms of tetanus is 20 days, while the average incubation period of other forms of tetanus is 10 days. This indicates that the organisms are not introduced at the time of vaccination, but get into the wound approximately 10 days later at which time the vaccination wound is ripe for secondary infection. These cases occur predominantly in girls and are due to the custom of vaccinating girl children on the upper thigh where dirt can be easily rubbed into the wound, producing secondary infection by the tetanus organisms. This form of tetanus can be prevented by strict asepsis and by vaccinating female children on the arm and not on the thigh.

From the type of wound that is most apt to become infected with tetanus, it follows naturally that certain groups among civilian population are more liable to this infection than others. This is particularly true of those employed in close contact with soil and domestic animals, such as farmers, stock raisers, stablemen, and those working in certain types of construction work.

Until quite recently there were two theories concerning tetanus that were universally accepted. The first of these held that tetanus was a disease solely of the central nervous system. The second maintained that tetanus toxin, unlike any other water-soluble toxin, reached the central nervous system by

traveling proximally in the axis cylinders of motor nerves. This latter theory was apparently supported by a great deal of experimental work. Recently these theories were questioned by Abel, and, in 1934, he started publishing the results of studies by himself and his co-workers on the pathogenesis of tetanus. Their experiments were most elaborate and most carefully carried out, and the results obtained from them were judiciously evaluated. From these experiments the following concept of the pathogenesis of tetanus was derived: the organisms multiply in necrotic tissue or in the presence of co-existent infection. The multiplying organisms form a water-soluble toxin which diffuse through the adjacent skeletal muscles and acts on the neuromuscular end organs, to produce a state of chronic contraction. Some of the toxin passes into the lymphatics and blood stream, and is carried to the spinal cord and medulla where a part of it is taken up by the specifically reactive cells and changed in some way. This new substance, more potent than the original toxin and not neutralized by anti-tetanic serum, circulates in the blood stream and causes death by interference with some part of the respiratory mechanism. After a lethal amount of this secondary toxin has been produced, it is not possible to save the life of the animal. This concept is in keeping with the ineffectiveness of the anti-toxin once the disease is fully developed.

From the foregoing outline of the etiology and pathogenesis of tetanus, it is evident that the first principle in the prevention of tetanus is the adequate surgical treatment of all wounds contaminated by *Clostridium tetani*, or suspected of being contaminated by it. Such adequate treatment calls for the use of a strict aseptic technique and the proper application of underlying general surgical principles, including the debridement of all devitalized tissue and the removal of foreign bodies. The wound should be left open. Cauterization of the wound is absolutely contra-indicated, for cauterization means devitalization of tissue. The use of oxidizing agents, such as peroxides, has been suggested, but it is probable that they are of no value due to the reducing action of tissues.

The second principle in the prevention of tetanus is the establishment of an immunity to the toxin of *Clostridium tetani*. This can be accomplished in two ways: either by establishing a passive immunity

at the time of the initial treatment of the wound by administering tetanus antitoxin; or by the establishment of an active immunity to protect the patient against future infections, by the repeated injections of toxoid.

When a patient, who has not been previously actively immunized, has received a wound which is of such a nature that it is likely to become infected with *Clostridium tetani*, it is necessary to resort to the production of a passive immunity by the injection of the serum containing the antitoxin. 1500 units is the usual prophylactic dose, but if the wound is very extensive or several days old when first seen, a larger dose should be given. A dose as high as 20,000 units has been recommended.

While this artificially established passive immunity has wonderfully reduced the incidence of tetanus, it is nevertheless far from satisfactory. In the first place, it is impossible to decide whether or not it is necessary to give the antitoxin in many cases. Furthermore, the administration of anti-tetanic serum is often followed by reactions of sensitivity of varying severity. The choice between the dangers and discomforts of serum reactions and the possibility of tetanus following an apparently trivial wound, is at times a most difficult one.

To prevent these reactions insofar as possible, previous to administering the serum, the patient should be tested for sensitivity, and if found sensitive, the serum should be given in broken doses. This, however, does not completely remove the possibility of reactions. In patients who are sensitive to horse serum, it may be possible to use bovine serum.

Another disadvantage of passive immunity is that it only lasts for a week or ten days, so that in severe cases and secondary operations it is necessary to repeat the injection. Antitoxin does not rid the wound of tetanus bacilli. Still another disadvantage is the uncertainty as to the proper size of the dose to be given, especially in children; and, finally, the administration of antitoxin is comparatively expensive.

The establishment of an artificial active immunity by repeated injections of the toxoid overcomes to a great extent the short-comings of the passive immunity. Severe reactions are almost unheard of, occurring only once in every 10,000 to 50,000 cases. Furthermore, the active immunity is much more lasting and probably can be maintained indefinitely

by the administration of "booster" doses of the toxoid given once a year. In horses the immunity conferred has lasted at least eight years. Finally, it is much less expensive in the long run than the passive immunity.

To establish active immunity against tetanus by vaccination with tetanus toxoid, three subcutaneous injections of 1 cc. each are given three or four weeks apart. Experimental evidence has shown that a protective level of immunity has been produced by the time of completion of the three injections. This immunity is about equal to that produced by the usual prophylactic doses of antitoxin and lasts from 12 to 18 months. For prophylactic use, tetanus antitoxin is therefore unnecessary after the completion of the initial immunization series. A "booster" dose of 1 cc. of the toxoid is given a year from the completion of the immunizing series, and once a year thereafter, and whenever the patient receives a wound of such a nature as to make it advisable to increase the titer of antitoxin in his blood. The "booster" dose is followed by a rapid rise in antitoxin in the blood, which may be several hundred times higher than the level previous to the administration of this stimulating dose.

Some authors have advised preliminary skin testing for sensitivity before giving toxoid. The incidence of reactions is so low, however, that it is indicated only in those who have exhibited allergic tendencies. It is well, however, to keep the patient under observation for a half-hour after giving the toxoid and have adrenalin handy.

It should be stressed that tetanus toxoid is of no value as a therapeutic agent and should not be given during the course of the disease. Furthermore, it is useless to administer it at the time of injury in a non-immunized patient, as the development of the antitoxin is too slow to protect the patient.

The efficacy of active immunization against tetanus has been firmly established in the present war. In the British Army, active immunization is a voluntary procedure, but approximately 95% of the troops are actively immunized. In that Army, in the first two years of desert warfare, there were 18 cases of tetanus, and of these 13, or 72%, occurred in the 5% of the troops who had not been actively immunized. In the French Army in the Flanders campaign, there were eight cases of tetanus. All these occurred in a group of 1800 wounded, who

had not been actively immunized. No case of tetanus developed in the 16,000 wounded who had been actively immunized. Its value has also been indisputably proven in our own Army. General James S. Simmons (*J.A.M.A.*, 1943, Vol. 122, No. 14, Page 916) recently made the following statement: "During 1941, the Army adopted immunization with tetanus toxoid as a routine procedure for all per-

sonnel. So far, we've had no tetanus among those immunized."

While the low rate of incidence of tetanus questions the practicability of active immunization of the general population, it undoubtedly should be employed routinely in children, farmers, and in all others whose vocation or avocation makes them especially liable to tetanus infection.

Floral Eponym (12)

EUPHORBIA

ABOUT this time every year the flowers in our patients' rooms are brightened up with sprays of Scarlet Plume (*Euphorbia fulgens*—Karw.), (*Euphorbia jacquinaeflora*—Hook). Rarely does the patient know the name of this dainty little flame-colored flower. With us it is strictly a hothouse plant. The genus *Euphorbia* is a large one and embraces several hundred or more species varying from cactus-like plants such as the Crown-of-thorns to the common Snow-on-the-mountain. Pliny says that Juba II, King of Mauretania, gave the name to a plant he found growing on Mount Atlas in honor of his physician, Euphorbus. Galen mentions a short treatise written by the King on the virtues of the plant. All the plants of this genus have a milky juice to which various medicinal virtues have been ascribed. Some are poisonous and some are local irritants. According to Irving, (*Am. J. M. Sc. N. S.* 41:89, 1861), the natives of the Southwest use the juice of *E. prostrata*, *E. capitata*, *E. corollata*, *E. palustris*, and *E. villosa*, successfully as an antidote to rattlesnake poison and the bite of other venomous reptiles. Experimentally he found that it did protect dogs that were bitten by old and large rattlesnakes.

Little is known of Euphorbus except that he was physician to King Juba. He had a brother, Antonius Musa, who was physician to Augustus. Like many a doctor of later date, his only claim to fame is that he held a high office.

THE NEWER TREATMENTS IN NEUROPSYCHIATRY*

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In response to many inquiries made of Dr. Masters, Dr. Shield, and myself, from both professional and lay sources, I am describing a synopsis of the newer treatments in neuropsychiatry. In presenting this subject I shall endeavor to avoid technicalities and merely pass in review some of the newer treatments of neuropsychiatric diseases. One of the effects of these treatments is that they are replacing the apathetic or the hopeless attitude of the past, and another is that they may rescue some of these patients from the hands of the fakir, the faith healer, and the advertiser. On the other hand, we shall have to guard ourselves against our enthusiasm, careless selection of cases, improper supervision, and commercialism. As far as I can determine no whole century has produced such dramatic procedures or such startling results in neuropsychiatric medicine as has the last decade. All of these newer treatments have attached to them a certain amount of danger but they are not as dangerous as the modern sulfa drug treatment, or an appendix operation, or an adult tonsillectomy, or in fact the removal of a large number of infected teeth.

One of the first of modern therapeutic developments following Freud's psychoanalysis and psychotherapy was the *Hyperpyrexia* treatment of neurosyphilis and certain other conditions by such means as typhoid vaccination, malarial inoculation as introduced by Von Norden of Vienna, and the induction of hyperthermy as chiefly developed by Neymann of Chicago. This latter treatment is given in a cabinet in which the temperature of the patient is run up gradually to 106 degrees F. and held there for an hour or two in neurosyphilis and gonorrhoeal rheumatism cases, and to that or a less degree for such conditions as arthritis, certain cases of neuritis, chorea, and some forms of encephalitis.

The introduction of the *Drug Narcosis Treatment* by the use of narcotics, chiefly barbitals, has been useful in some cases of agitation depression, and of excited states. The patient is kept in a condition of almost complete narcosis for about two weeks and then brought suddenly out by stopping the drug or

by discontinuing it somewhat gradually while suggestion is practiced before entire awareness takes place. This treatment, while valuable in certain cases in which shock treatments are contra-indicated, has not been as effective as the more dramatic shock treatments.

Partial Drug Hypnosis. Recently we have been treating patients with a method of gaining access to their psyche by the gradual intravenous injection of sodium amytal over a period of half an hour. The patient gets into a semi-conscious state and usually will open up and tell his secret worries which otherwise he would either not tell or could not impart. During this partial narcotic period the investigator implants explanations and suggestions which are valuable in the reestablishment of the patient's psychic balance. Another way to obtain the same result is to inject intravenously 2 cc. of dial with urethane every hour for three doses. This gives a longer period of accessibility.

In my opinion, while the introduction of *psychoanalysis* in the second decade of this century by Freud was a great contribution, still I think that Freud himself and his disciples have greatly overstressed the sexual genesis of psychoneurosis and similar states. It would seem that these more recent treatments have certainly simplified and lessened the time and the expense of the older method of psychoanalysis.

Recently in some lay magazine, the old question of the value of *hypnotism* in medicine has been revived. It would seem that these newer ways of obtaining accessibility to the patient's inner self are far preferable.

Lichtenstein and Small in their book just published, *A Handbook of Psychiatry*, say the following: "We may designate three stages in hypnosis: (1) somnolence, during which the subject feels sleepy and is fully aware of what is going on, but is suggestible to a degree; (2) catalepsy, during which the subject may maintain a suggested posture or a position of the extremities, without apparent discomfort, for a long period of time; and (3) amnesic state, during which the subject is under deep hypnosis and will not recall what transpired during the

*Read before the Richmond Academy of Medicine, November 23, 1943.

hypnosis after he is awakened." Suggestion in shock treatments may be given in three stages as in hypnosis, especially, I think, the stage in which the patient after treatment is becoming aware. To continue, ". . . Post-hypnotic suggestions may also be given in which the patient will automatically carry out suggested acts after being awakened", the authors say.

The Insulin Shock treatment was introduced by Dr. Manfred Sakel, of the Vienna Clinic, who in 1934 gave insulin in the hope of sedating an alcoholic patient by inducing hyper-insulinism. Meeting with some success he used insulin in cases of morphine addicts and found that it aided in relieving the withdrawal symptoms and shortened the withdrawal time. Then he tried it on a case of schizophrenia (dementia praecox) in daily increasing doses and noted marked improvement. This was developed until it was found that the statistics of social adjustment in these cases, which had been only around 20 per cent, increased to about 60 or 65 per cent. It has been found that cases whose manifestations dated back no further than four years improved and adjusted much more satisfactorily than longer lasting cases. In fact, only for a sedative effect is it justifiable to give insulin to old degenerated cases and other sedatives are probably better in these.

Treatment.—To obtain insulin shock, insulin is given by subcutaneous hypodermic injection beginning with 25 units and increasing 10, 15, or 20 units a day. The treatment is given in the morning on an empty stomach. A sweat reaction is common after the first few treatments. Some patients are very insulin-susceptible and others are insulin-resistant; hence, while one patient may go into shock with 30 to 50 units, another may require as much as 500 units or even more. A treatment consists of a period of relaxation with or without sleep for about 1¾ to 2 hours at which time the patient sweats profusely; then the coma state will probably come on. Some patients are restless and at times noisy for ten or fifteen minutes between the relaxed period and the coma. An occasional case will have a convulsion. Patients are kept in coma for from 1 to 1½ hours and are brought out by giving them glucose intravenously, 20 cc. of 50 per cent solution, or Karo syrup solution by nasal tube, or 100 gm. of sugar in 200 cc. of water by nasal tube. They come out quite promptly and are given a breakfast consisting of

fruit juices, cereals, toast, eggs, sweet jelly or syrup, bacon, and coffee, or a somewhat similar meal. During the treatment, one or two nurses experienced in this therapy and one doctor are available to the patient. If the patient cannot be brought out of coma by glucose, give eschatin (Parke-Davis Co.) 5 to 20 cc. intravenously. This may be repeated. A transfusion also helps. A second physician should be quickly available. One or two rest days are given each week and a full course runs to about forty or fifty treatments. The patients are usually up and about the hospital in the afternoon. The amount of insulin and the number of treatments depend upon the individual reactions of the patient. Certain heart diseases, very advanced years, marked arteriosclerosis, acute fever, and serious physical illness are contraindications to the treatment. Essential hypertension is usually not a contraindication and this condition may even improve. There is slight danger in the treatment. We have had only one death in thousands of treatments given to hundreds of patients.

During the treatment, both in the period of going into coma and shortly after they have been brought out, the patients become much more accessible to psychic analysis and psychotherapy. After successful treatment, delusions and hallucinations, if they had been observed, disappear; past anxieties, obsessions, and depressed thoughts leave; verbal expression, thoughts, and actions are regulated; seclusiveness practically disappears; decisions are more easily made; and the patients are in a contented, or even a happy state of mind. Physically, most of them have a better appetite, have gained weight, and are more vigorous. If the treatment has been unsuccessful as to recovery, many patients are, nevertheless, generally better in mind and body. Although some do not improve, few are worse off for the experience.

It is difficult as yet to say just to what the benefit of insulin shock is due. It is probably due to several elements, such as the availability of the patient to psychotherapy, endocrine and metabolic change or stimulation, the shunting off of abnormal thought-associations by the so-called dropping out of the function of defective brain cells, and to the physiological rest of brain cells during coma; for, under treatment, a better rest of the brain cells is obtained by coma than by sleep.

Metrazol and Electro-Shock Convulsive Therapy.—Metrazol (or cardiazol) has been used as a heart

stimulant for several decades. Metrazol is a camphor-like derivative. It was introduced by Medunas of Budapest, Hungary, in the treatment of dementia praecox (schizophrenia) and allied mental illnesses shortly after Sakel introduced the insulin shock treatment.

Treatment with Metrazol.—From 3 to 6 cc. is given intravenously, according to the weight and physical status of the patient, on the average of two or three times a week. In from 15 to 75 seconds the patient should go into a major convulsion not differing from other major convulsions. The treatment should be given on an empty stomach. The convulsion lasts as a rule for from 30 to 45 seconds. Curare is sometimes given to lessen the severity of the convulsions but it is of itself a dangerous drug. We have never used curare.

Electro-Shock Treatment.—The first study was done by induced convulsions in dogs and pigs with electricity by Cerletti of Rome. The first treatment to human beings was given by Bini, also of Rome, in 1938. It was introduced in this country by Hughes, of Pennsylvania, in May, 1940. We started its use shortly thereafter when Kalinowsky and Barrera reported favorable results.

The rheostat resistance is measured by ohms of resistance before administration, then from 75 to 110 volts of direct current electricity is given to the patient in from 25/100 to 10/100 of a second. This is given through the temples by special plates and head apparatus.

Proper protection in convulsion therapy is used to prevent chewing the tongue or cheeks. Plates and bridges and hairpins should be removed before treatment. During the convulsions the patient's arms should be held close to his sides, the covering being closely bound about him, and several nurses and a doctor should be present to hold and prevent the patient from injuring himself. The treatment is best given on a narrow table covered with a thin mattress. Following the convulsion there is usually a period of amnesia. Also one or two hours after the convulsion there is often a period of psychoanalytic accessibility, similar to that of insulin shock. The course of treatment usually consists of from 5 to 20 convulsive shocks. The contraindications are fewer than in insulin shock. If no convulsion is obtained, the treatment can be immediately repeated. In treatments that do not produce a convulsion a partial amnesia state ensues which is usually somewhat

beneficial. In competent hands the danger of electro-shock is slight.

It is our opinion and that of others, for instance, Dr. Nolan D. C. Lewis of the New York Psychiatric Institute, that insulin is to be preferred in the treatment of schizophrenia, and metrazol or electro-shock in depressive or in elevated cases, and in emotional or agitated involution and anxiety states. In most cases, in our opinion, electro-shock convulsive therapy is more effective and less dangerous than metrazol treatment. Insulin, metrazol, or electro-shock should be given in cases selected by experienced neuropsychiatrists, and it should be remembered that the amount of the drugs, or electricity, the number of treatments, and the frequency of their administration are not rule of thumb matters, but have to be determined by the judgment of the physician or physicians in charge of the case.

Frontal Lobectomy and Lobotomy.—Dr. Egas Moniz, in Lisbon, introduced frontal lobectomy in 1935, a method of treating cases of anxiety psychoneurosis and obsession states by culling out areas of the frontal lobes and leaving in the plug, very much as one plugs a watermelon. Thus the association fibers from the psychic area to the thalamus and hypothalamus are cut. His method was brought to this country by Drs. Freeman and Watts, of Washington, who have reported striking results. They have changed the method, however, to lobotomy for their operation. Dr. Lyley, of Jacksonville, has been obtaining success with a slightly different operation. In the operations by either of these methods, instead of a plug being made, fibers in the psychic area are cut from side to side, severing the neurons carrying the emotional feeling-tones. Lobotomy is useful in senile depressions, agitative depressions, involutional melancholia, and has allowed many patients to live at home instead of at institutions, the depression being changed into a euphoric state.

Desensitizing the Hypothalamus by Emotion-Reason Balance.—Chiefly the emphasis is new in this method of therapy for the emotionally unstable, and there is nothing very startling or dramatic about it. Realizing that many cases of psychoneurosis were due to poorly conditioned emotional control and that neither Freudian psychotherapy nor drugs nor endocrine nor physiotherapy treatment was of much avail, some of us began studying the balance between the emotions and the reason. I have written a series of articles upon the subject, so I shall only touch

upon it here.

The gist of the matter is that our emotions are millions of years old, harking back to our remotest animalistic ancestors, while our reasoning power only began to develop some eight or ten thousand years ago with the dawn of civilization. Consequently, when a situation arises, whether its origin is exogenous or autogenous, our emotions immediately surge up to meet it. With our complex organism endeavoring to meet the exigencies of our complex society, if we handle our feelings, our thoughts, or our behavior solely with our emotions, we usually go wrong, for our feeling-tones become discordant, our thought processes jumbled, and our behavior disordered. Out of this comes hurt feeling-tones, various sensations, discomforts and disturbances of function; and our thought processes become illogical, irrational, obsessive, and disturbing; our behaviour becomes frustrated, or resentful, or self-condemnatory; or possibly accusatory, persecutory, or destructive. These are only a few of the wrong reactions. I would suggest the term *hypothalamia* for this state—indicating a hypersensitive or disordered hypothalamus.

Attention is called to the fact that when these

improper emotional manifestations occur, if we can use of ourselves our reasoning power, or if we are taught to use it, we may become reinhibited, conditioned, and controlled. Moderate doses of rabellon, belladonna root extract, is useful in aiding results. Mild electro-shock to produce amnesia is also of use.

SUMMARY

These newer treatments, especially the shock therapies in the severe cases, have been the most beneficial methods, in my opinion, of treating nervous, emotional, and mental states, ever introduced. But it should be remembered that certain suggestive therapy (psychoanalysis and psychotherapy in modified form) is important, and, I might say, almost essential in treating these cases. It is also imperative that each case be treated individually and that no method of therapy should be simply slapped down upon a large or even a small group of patients. It is also important that in giving these treatments, one does not neglect physical rehabilitation of the patient, and the investigation of the case from every possible angle.

212 West Franklin Street.

Mesmerism.

One of Franklin's sagest observations on the subject of medicine was that "Quacks are the greatest liars in the world—except their patients."

Accordingly, he was instrumental in debunking the "animal magnetism" therapy cure practiced by Friedrich Mesmer.

Early in 1784 Mesmer's cult was a tremendous fad in Paris, numbering Lafayette and nobles of high rank in his following. Franklin, as a mem-

ber of the Royal Medical Society of Paris, was appointed by King Louis XVI to serve on a commission examining Mesmer's doctrines and experiments. It was largely through the sagacity of Franklin's report that the charlatan's Hocuspocus was exposed and Mesmer was forced to discontinue his practice. (Benjamin Franklin's Contributions to Medical Science, prepared and distributed by The National Franklin Committee of Philadelphia.)

THE KENNY TREATMENT FOR INFANTILE PARALYSIS— A Year's Observation of Six Cases*

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In August, 1942, the Orthopedic Department of the University of Virginia Hospital became interested in the Kenny treatment for infantile paralysis. A member of the Staff was sent to Minneapolis where he was instructed in the fundamentals and concepts of the treatment. An orthopedic nurse and a physiotherapist were also sent for more complete instruction under the direct guidance of Sister Kenny.

Dr. Funsten, the Chief of the Service, likewise visited Minneapolis, where he observed the method and recorded his observations for the American Academy of Orthopedic Surgeons. Together we formed what I believe is the only complete unit trained to use the treatment in the State of Virginia.

On many occasions, we have got together—nurse, physiotherapist and physician—and have tried to sum up our conclusions based on the cases we saw in Minneapolis and at the University of Virginia Hospital. That, I might add, is more easily accomplished at home than in Minneapolis near the domineering influence of Sister Kenny.

We have hesitated to present before this society only six cases.† Fortunately there was no epidemic in Virginia in 1942, and, unfortunately, hospital facilities did not permit us to admit more patients.

Before examining some of the individual case histories, may I digress and review some of the current discussion relative to the treatment.

Opinion in this country appears to be fairly evenly divided. Competent groups of orthopedic surgeons have gone "all out" for the method. Equally competent men elsewhere have utterly condemned it.

Sister Kenny claims that the disease she describes as infantile paralysis resembles only slightly the disease we have been treating for years. She insists that muscle spasm and mental alienation are symptoms heretofore unrecognized and untreated.

The presence of paralysis is determined casually—no attempt is made to do individual muscle examination. Indeed, Sister Kenny insists that they are harmful.

The proponents¹ of the method state "paralysis is a corollary of muscle spasm and whenever paralysis can be demonstrated in a group of muscles, spasm is present also, either in the 'apparently paralyzed' muscle group or in the antagonistic groups of muscles."

Temporary causes of paralysis are: (1) "Voluntary or reflex inhibition of motor power from pain and tenderness in the muscles on motion, the so-called 'protective reflexes'"; (2) "Contraction of the muscle to its physiological limit by muscle spasm"; (3) "Mechanical disadvantage of the muscle which has been stretched excessively by contraction and muscle spasm in its antagonist group," and (4) "Temporary toxic changes in the neurons supplying the affected and seemingly paralyzed muscle."

Sister Kenny points out that mental alienation or pseudo-paralysis is not due to total destruction of the anterior horn cells. Muscles so affected are normal in contractile power and in nervous innervation, but voluntary control of them has been lost by the patient. When hot packs are applied to muscles in spasm, the latter is relieved and the antagonistic apparently paralyzed muscles return to their normal resting length, and regain their function rapidly with muscle re-education.

Attempts have been made to explain mental alienation on a physio-pathological basis. Several interesting theories have been offered but none so far is satisfactory.

The opponents of the method are unanimous about one thing—they heartily dislike Sister Kenny and Sister Kenny heartily dislikes them. Occasionally personalities have crept into what should have remained a scientific discussion.

Dr. J. Albert Key,² one of my early preceptors, recently compared the Orthodox to the Kenny treatment and concluded that the Orthodox was superior in every way. The series of cases treated by Lenhardt and his associates in Baltimore was used as a basis of comparison. In this series 296 cases were treated by the Orthodox method. Sixty-eight per cent recovered completely, 15 per cent had only slight residual paralysis, 5 per cent had marked residual paralysis, and only 2 per cent are wheelchair pa-

*Read before the annual meeting of the Medical Society of Virginia at Roanoke, October 25-27, 1943.

†I am indebted to the Department of Physiotherapy for their assistance in checking these patients.

tients. The cases reported by McCarroll were chronic cases or late convalescent, and end results in his series are slightly misleading.

To quote Dr. Key's conclusions, "The most important difference between the Kenny and the Orthodox methods of treating poliomyelitis is that in the Kenny method emphasis is placed upon muscle spasm as the most important feature of the disease and efforts are made to relieve this spasm by hot fomentations, while in the Orthodox method flaccid paralysis of muscles is considered the most important feature of the disease and efforts are made to protect and restore function to the paralyzed muscles. The other two symptoms which are stressed by Miss Kenny (incoordination and mental alienation) are recognized under different names, but are treated in much the same manner under each method. However, we believe that early active exercise of muscles is harmful and tends to prolong the stage of tenderness and contracture and we do not begin our muscle training until these symptoms have subsided, while Miss Kenny begins her muscle training as soon as possible after the diagnosis of poliomyelitis is made. We also consider splints a useful adjunct to our treatment where they are indicated.

In the Orthodox method the symptoms which Miss Kenny calls muscle spasm are recognized but they are called rigidity and muscle contracture and are treated by immobilization in splints or casts to relieve the pain and prevent contractures and the development of deformities. In anticipation of the criticism that even though Orthodox treatment has recognized the so-called muscle spasm it has failed to emphasize and treat this symptom, I wish to state that rest is probably the most important therapeutic measure in our armamentarium and that in order to put a muscle at rest we immobilize the part. Consequently, we treat the tender, painful contracting muscles by rest. This is obtained by our splints or casts. The reason we have not emphasized these symptoms is that they tend to subside when the limb is put at rest. The tendency of the muscles to contract (so-called muscle spasm) subsides when the pain and tenderness disappear, and, if deformities are prevented, this symptom is rarely an important problem under Orthodox treatment. It has not been emphasized because it subsides spontaneously.

Other studies have shown that the term "muscle spasm" is inadequate to describe the complexity of dysfunction.³ The concept of mental alienation does

not contribute to the explanation of paresis since objective signs of a disease process are always demonstrated in the paretic antagonist of muscles in spasm.

Our series of cases consist of five children and one adult. All of the cases have been under treatment for a year or more. Four were treated only with the Kenny method, the remaining two had considerable Orthodox therapy before being treated by the Kenny method.

We made no attempt to use any of the cases as controls. Obviously, we had too few cases and we also felt that maintaining a true series of controls was practically impossible. There is no way in which the pathology can be differentiated in two cases with identical muscle paresis. Until methods are developed which will help differentiate true anterior horn cell damage from temporary edema and toxemia, the use of controls will be misleading.

Sister Kenny's concepts were carefully carried out. Beds were fitted with foot and fracture boards. Hot moist packs were applied exactly as she directed and as often. Prostigmin was used late in the treatment in an effort to combat muscle spasm. Muscle re-education was begun as soon as pain subsided and was continued daily under the guidance of trained physio-therapists.

Case I. An 8 year old white female treated 12 months with the Orthodox treatment. The Kenny treatment was begun in September.

Examination: At the time of the onset of the disease the child had essentially flail arms and legs and only a trace of power in the abdominals. After the Orthodox therapy she showed no improvement in the lower extremities or abdomen. There was slight return of power in the deltoids, a trace of power in the biceps, and a trace in the pectorals. Both hands showed marked paresis in all the muscles.

After a year of the Kenny treatment both deltoids are good, both biceps are good, triceps are poor, pectorals are good, both hands show fair power. The lower extremities are essentially flail, but this child can now get about on crutches. There is no fixed deformity.

Case II. Five year old white female who had 8 months of the Orthodox treatment.

Examination: Weakness in the quadriceps of the right side and a contracted ilio-tibial band. Fair muscle power in the whole extremity, but marked

muscle incoordination resulting in a gluteus medius gait with valgus of the foot and external rotation.

After treatment the child was brace free and can walk without a trace of her former disability.

Case III. Thirty-seven year old white female treated immediately after the onset.

Examination: Flail right and left arms, flail legs, poor abdominals, tight hamstrings and quadriceps, and tight, paralyzed sterno-mastoids.

After treatment, the right arm shows a fair deltoid, poor triceps, fair biceps with good hand and forearm power. The left arm shows good power, though not normal. The lower extremities remain essentially flail except for return of the internal and external rotators. Abdominals are good. This patient will be ambulatory with braces and crutches.

Case IV. Four year old white boy treated immediately after onset.

Examination: Flail left arm, flaccid quadratus lumborum on the left, marked pain and spasm in the whole lower extremity, left, but no apparent loss of power.

After treatment the left arm was still essentially flail but the tightness had disappeared from the lower extremity. This child will need surgical intervention at a later date.

Case V. Six year old white boy treated 3 weeks after the onset.

Examination: Right leg was flail, left upper leg showed fair power; lower leg was flail except for spasm and slight power in the gastrocnemius.

After treatment the right upper leg shows fair power. The lower leg has only a trace of power in the heel cord and toe extensors. The left leg shows normal power in the upper leg and fair power in the lower leg. This child can get along with crutches and will not require braces at present.

Case VI. Treated 5 months after the onset.

Examination: Left leg completely flail; right upper leg fair; lower leg flail.

After treatment the left leg shows fair abductors and adductors, absent quadriceps, poor power in the heel cord. The right side now shows trace of power in all the muscles of the lower leg.

None of the cases has developed fixed deformities, though more time must be allowed for their development. All of the cases showed some degree of muscle spasm and pain. These were quickly relieved by the application of hot packs.

Function was improved in all the cases but braces

will be required for two cases. One will require crutches and one already shows a definite need for surgery.

All of the paralyzed muscles were tested for reaction of degeneration and we were quite surprised to find changes in all paralyzed muscles, including those supposedly alienated.

The general appearance of the patients seems to be better than those treated by the Orthodox method and there were no apparent vascular changes in the paralyzed extremities.

Conclusions: Though our series of cases is too small to allow us to draw any scientific conclusions, we feel that the Kenny method deserves further trial. If it only offers the patients greater comfort than the Orthodox therapy and does no harm, it is worthwhile. We could demonstrate no injury that could be attributed to the treatment. We cannot accept Sister Kenny's terminology nor her explanation of mental alienation.

We firmly hope that the opponents and proponents of the method will be allowed to settle their differences at medical meetings and in medical journals, unhindered by lay opinions in the lay press. A great deal of investigative work remains to be done and cases seen for a year must be followed for several years. There is as yet as little ground for over-enthusiasm for the method as there is for total condemnation.

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DISCUSSION

DR. ROBERT V. FUNSTEN, Charlottesville: Mr. President and Members of the Medical Society of Virginia; I think you have noticed in Dr. Frankel's description of the technique that all of these cases have been rather severely paralyzed. The six cases treated do not represent a cross-section of the general run of infantile paralysis. In an epidemic in Albemarle County several years ago we counted sixteen hundred cases of poliomyelitis, but out of that large number there was scarcely a ten per cent incidence of paralysis, and in some of those cases the paralysis was very mild.

This explains a good deal the success of the Sister Kenny method of treatment. She claims great cures for

the treatment, whereas we know that many cases recover spontaneously without treatment. She also lays a great deal of emphasis on bulbar paralysis. We know those children are terribly sick, but when they do not die they usually get well without any paralysis. That is one phase of the attitude toward the Kenny treatment.

About a year ago there were appointed two members from each of three orthopedic societies to evaluate the Kenny method of treatment. Those doctors were really put on the spot. They represented the American Orthopedic Association, the Orthopedic Section of the American Medical Association, and the American Academy of Orthopedic Surgeons. These men have gone all over the country, visiting places where epidemics of poliomyelitis have occurred. They went to Chicago, to Minneapolis, to Winnipeg, Canada, to St. Louis, Mo., and to Dallas, Texas, observing the results of the Kenny treatment. Some were rather impressed and thought they saw something of value in it, particularly in the absence of contractures and in the relatively early relief from what pain they had.

The "pain" has been rather surprising to us as orthopedists, because it has never been, so far as we have been able to decide, a very great factor in the disease. The pain almost invariably disappears with immobilization, and yet Sister Kenny cries about all these little suffering children who have this pain. It is true that most of them do have pain when they are moved or when pressure is put upon the muscles involved.

The relationship of the "spastic" muscle to the paralyzed muscle, which is relatively free of symptoms, has been rather a problem to us. I think we should recognize that there is a certain degree of spasticity in the muscles and when these spastic muscles are put under pressure there is pain. Perhaps the other muscles that are opposed to them do give in to the pain element and become relatively inactive.

One of the most recent studies made was in Chicago, where there were approximately 1,015 cases of active polio this summer. Some of those cases reached the hospital immediately. Some of them were under observation and were isolated for a period of time before they reached the hospital. In one hospital in Chicago, the Michael Reese Hospital, all cases had serum treatment immediately, thereby delaying the starting of the hot packs for a week or two.

There is something I want particularly to bring to your attention and ask for your cooperation. That is in the elimination of the period of isolation in cases of poliomyelitis. There has been no series of cases in which there was any positive evidence of contagion during the early stages of the disease. Quarantine only means hampering the onset of the treatment by a period of three weeks of isolation, compulsory in a great many states. Personally, I think it is entirely unnecessary, and I think it is quite a handicap to progress in the care of the disease. I believe that if the Sister Kenny treatment has value (and I think it has some value) the first week or the first ten days after the onset of the disease is probably the

time in which the hot packs and the rest of the Sister Kenny treatment will do the greatest amount of good.

The experience in the Chicago hospitals, even in those cases that were sent out of the hospital at the end of the two weeks or three weeks isolation period without any evidence of poliomyelitis, or spasm (as Sister Kenny might call it) was that when some returned there was muscle spasm and it took from two to four months to get rid of it, instead of the two weeks or three weeks which it took originally.

I would like to say, in regard to this treatment, that the medical profession does not like to have something rammed down its throat when it has not been tested scientifically. The public has been trying to ram the Kenny treatment down our throats. A few Sundays ago I heard a radio commentator say that in a certain community there was going to be formed a fathers' club, whose object will be to provide Kenny treatment facilities where needed and to create a program to bring to task all medical men who were openly opposed to the Kenny principles.

PRESIDENT EMMETT: Is there any further discussion of Dr. Frankel's paper? This is a very beautiful demonstration, and I am sure Dr. Frankel will be glad to answer questions.

A MEMBER: I should like Dr. Frankel to discuss what he thinks is the proper method for handling these cases in the smaller communities and in the smaller general hospitals. Is it advisable for us to have some of our nurses trained in the technique, or is it advisable for us to send our cases to centers where the treatment is available?

PRESIDENT EMMETT: Is there further discussion, or do any of you wish to ask further questions? If not, Dr. Frankel, will you close the discussion?

DR. FRANKEL, closing the discussion: I should like to thank Dr. Funsten for his discussion.

As to the question just put, first, if we are going to get any results that are going to be accepted, Sister Kenny insists that her treatment be carried out to the letter; and the proponents of the method will claim, if you do treat a patient and you fall down in one of the secondary measures used in the treatment, that you are not using the Kenny method. Merely using hot packs is not the most important part of the treatment. The most important part has not been emphasized. I think the muscle re-education is the most important part—much more important than the application of fomentations under blankets. It takes a trained physiotherapist to apply the long series of muscle-re-education procedures that these cases require, though anyone can apply the hot packs. The treatment cannot be carried out in a small hospital unless it is one especially equipped. I do not know of any small hospitals that have trained physiotherapists.

In the event of epidemics the problem is very difficult. In New Haven recently there was an epidemic, and a call was sent out for trained physiotherapists. The children's families were trained to apply the hot packs and did help with that, but, unless we give this muscle re-

education, the child is not receiving the Kenny treatment. It is expensive; it takes time; but I think we have seen enough benefit from it to warrant carrying it out further. If those children are given only a little improvement I think the treatment is worth while.

A MEMBER: Before you leave the platform, Dr. Frankel, I should like to ask if you think the children should have hot packs in the home pending admission to the hospital.

DR. FRANKEL: Yes, I think that would be very valuable. The mothers can be taught how to apply these hot packs. It is not very difficult and not expensive. When children cannot be admitted to the hospital I think this

treatment should be carried out at home.

I might add a word or two to what Dr. Funsten said about the isolation period. We lose about three weeks. From the information we have so far, we believe if the excreta are disposed of carefully the tendency to spread of the disease will be eliminated. The only information we have is that the excreta have been passed on to flies, the flies killed and ground up and fed to monkeys, and the monkeys have developed infantile paralysis. So the excreta problem, I believe, is the one that is going to have to be worked upon, rather than isolation of the individual case.

Post-War Civilian Fliers Need Eyes Like Birds.

With thousands of persons planning to buy the promised post-war inexpensive airplanes, a new field of human activity will be opened up that will require more efficient eyes than those that have guided motorists in the past, says M. J. Julian, president of the Better Vision Institute. Birds have the sharpest, keenest eyes of all creatures, including man. They need such eyes. Post-war civilian aviators must strive for bird-like eyes. They will have to train and tune up their sight if they are to avoid the fate of Icarus.

"Civilian fliers will find new conditions of seeing in air motoring. On land it is possible even with inefficient eyes to judge distances and speeds by objects along the route of travel, but in the air those guides will be lacking, or are to be seen only remotely in new perspective. A land-lubber taking to the air easily might misjudge the distance, speed and direction of another plane. Peripheral seeing, or visions from the side, will have to be trained, for if a civilian flier should not see another plane approaching to cut across his path at 150 miles an hour, the result would be disastrous.

"In operating automobiles millions of persons have been very neglectful of their eyes. Instead of keeping them tuned up to top efficiency, such per-

sons have depended upon their brakes and the maneuverability of their cars to dodge hazards. But planes have no brakes comparable to the automobile's pneumatic four-wheel brakes. Also, because of the nature of flying, it will be hard to change in a split second the course of a plane traveling 100 miles an hour."

Cold Vaccine Sales Unwarranted Commercial Assault on Public Purse.

The prescription and sale of cold vaccines is an unwarranted commercial assault on the public pocketbook, *The Journal of the American Medical Association* for January 22 declares. *The Journal* says:

"Recent communications to the offices of the American Medical Association indicate that the prescription and sale of cold vaccines is again taking place on a large scale. This, in the face of the recognized lack of scientific evidence for the value of these preparations, is indication of irresponsibility on the part of some manufacturers of pharmaceuticals. The scientific evidence against the value of oral cold vaccines is overwhelming; consequently individual physicians and firms who deal in pharmaceuticals and who lend themselves to wholesale uncontrolled distribution of such preparations are perpetrating an unwarranted commercial assault on the public pocketbook."

MEDICINE UNDER THE CZARS AND UNDER STALIN*

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We are full of amazement and admiration at the heroic exploits of the Russian Army against the Nazi invaders. The achievements of Soviet mechanized warfare are startling and bewildering to friend and foe alike. Those of us who knew the old Russia, whether through personal experience or through acquaintance with the literature of Tolstoy, Turgeniev, Chekhov and Dostoyevsky cannot cease to marvel at the transformation of the Russian people. We can hardly recognize the stolid, ox-like fatalistic peasantry or the indolent, talkative, impotent intelligentsia of Czarist days in the competent workers, the efficient farmers, and the indomitable fighters of the present day.

We physicians are particularly impressed by the accomplishments of the Soviet War Medical Services in saving 90 per cent of the wounded and enabling 70 per cent of these casualties to return to active service. We recall that in World War I 40 per cent of the Russian wounded succumbed to their injuries and the death rate from disease was appalling. After making due allowance for the great advances in wound treatment and military surgery since 1914-1918 the contrast between the inefficiency and incompetence (not to forget the corruption) of Czarist days and the splendidly organized and magnificently functioning Medical Military Service under the Soviets is indeed stupendous. Side by side with the Russian fighter even to the most advanced and perilous of the front lines go the doctors and nurses and the medical assistants, administering immediate aid to the fallen and transporting them without delay to treatment stations and hospitals.

All this prodigious machinery of military medicine was not created overnight. It has its roots and derives its being and structure from the system of health and medical treatment built up by the Soviets in the last twenty-five years. To properly understand and evaluate the progress that has been made since 1914 one must take into account the state of health and medical service under the Czars as well as the infinitely worse conditions brought on by the

last war and the four years of bloody counter-revolution that followed the overthrow of the Czarist regime and the establishment of the Soviet Government.

As a member of a relief mission to Russia and other parts of Eastern Europe in 1921 I was confronted by such a spectacle of suffering, misery and disease as no people has experienced since the dark ages. Famine, plague and the other ghastly horsemen of the Apocalypse rode over the ravished land. There was not a village or hamlet that did not have its heavy quota of typhus victims. There were countless millions of them and there was also Cholera, dysentery and bubonic plague. Hordes of homeless children ranged the country-side and the streets of shattered cities like packs of animals. I saw children of eight to fourteen who had wandered as far as two thousand miles from their homes. Their parents were dead, their villages were destroyed, there was no food, no warmth, no shelter; and so these bands of juvenile vagrants roved about and lived and died as scavengers and thieves.

The American Relief Administration and the Nansen Committee brought what help they could. Thousands were saved. Countless thousands were given new hope and strength to survive and to set to work on the colossal task of rebuilding and rehabilitation. To me and to others of our American workers it seemed a well-nigh hopeless task—to bring order out of this chaos, to bring work and food, hope and health and the promise of a happy future to this bleeding, stricken, impoverished, exhausted people. We thought it would take decades before the situation could be improved materially. We calculated that it would cost infinitely more in wealth, resources, in energy and organization than the Russians, the new Soviet government, could ever dream of providing.

And yet the miracle has come to pass, as I saw in 1933, and as the unimpeachable facts and figures of the last few years demonstrate to believer and skeptic alike.

By June, 1941, when the Nazi hordes poured over the fertile Ukrainian plains to problem of public health and medical service under the Soviets

*Read at the regular meeting of the Richmond Academy of Medicine on October 26, 1943.

had been solved. Whereas there were 20,000 doctors in all Russia under the Czar there were almost 150,000 under Stalin and another 300,000 trained medical assistants, midwives and nurses. Whereas there were about 150,000 hospital beds in 1913 there were over 800,000 in 1941. Whereas there were a total of 7,000 maternity hospital beds in 1913 there were 140,000 in 1941. Whereas, in 1913, 300 infants out of every 1,000 died before reaching one year of age, the infant mortality by 1941 had been cut down to half and the total mortality had been reduced from 30 per 1,000 in 1913 to 19 per 1,000 in 1941. These figures are authentic and the record speaks more eloquently than any words of mine.

There were 13 medical schools in all the empire of the Czars. There are about 60 today giving 5 year courses of medical training. The curricula, the calibre of the faculties and the scientific equipment compare favorably with grade A medical schools in America and Britain. The teaching lays great stress on the practical. The student learns by practice as well as by precept from the very beginning of his training. His tuition is free and his living needs are provided for. When he graduates he is sent to a rural community for three years after which he may locate wherever he chooses. By that I do not mean that he hangs out a shingle and starts out to build up a private practice. There is virtually no private practice in Russia. Every physician is an employee of the State. And let me pause here for a moment to say in parenthesis that I am not advocating the Russian system or any other system of socialized medicine in this paper. I am merely trying to report what progress has been made under Stalin in the improvement and maintenance of public health and in the treatment of disease. Under the Czars malaria was prevalent in every region, typhus and cholera were endemic throughout the land with frequent epidemics of those diseases as well as of smallpox, typhoid, dysentery and other plagues. Trachoma was rampant and blindness was so common it passed without notice. Tuberculosis took its toll by the numberless thousands and there were villages with as much as 80 per cent of the population infected with syphilis. Today, under the Soviets, there is universal vaccination and inoculation against smallpox and diphtheria. The vastly improved water supply and sewage systems have

almost done away with typhoid and dysentery. Cholera is a thing of the past. The bubonic plague is a nightmare of gone but not forgotten days. Russia has ceased to be a health menace to the Western World. The people as well as the Army no longer dread the havoc of typhus; and syphilis which in the days of the Czar was largely non-venereal and transmitted mainly by unclean vessels and unsanitary living conditions (even as tuberculosis), syphilis which in the old days furnished a frightful percentage of tertiary untreated cases is now reduced to such low figures that in the induction of recruits the rejection for syphilis, under rigid tests, is almost nil.

In the good old days under the Czars the wealthy and the nobles and officials had the benefit of treatment by well-trained physicians. But there were no more than about 2,000 physicians in all the rural areas of the vast empire. These were *Zemstvo* or district physicians paid out of Government funds and each district included dozens of villages in areas covering hundreds of miles. A very small percentage of the peasants, 90 per cent of the total population, ever received the benefits of medical care. Very few of the 150,000 hospital beds served the rural population. Most of the doctoring was administered by the village priest, the itinerant quack, the old peasant midwife. Twenty-five per cent of the workers' and farmers' earnings went for vodka which was the richest source of government revenue. Ninety per cent of the people were illiterate and there was no attempt to disseminate information on health and sanitation. Today, under the Soviets, there are 12,000 medical centers in the cities and about 15,000 such medical stations in rural communities. Each medical center is the keystone of health prevention and medical treatment in its district. All physicians are directly or indirectly connected with the medical centre.

Some medical centres have perhaps a couple of physicians, a dentist and a nurse. Others have medical staffs running into the hundreds. It depends on the area and population served by these centres. They are equipped with laboratory and diagnostic facilities. The larger ones, as for example the Moscow Medical Centre, are housed in huge buildings and are equipped to apply the most modern and scientific diagnostic and therapeutic techniques. Patients come to these centres for treatment or phy-

sicians are sent to the homes of the patients if necessary. It must be added, however, that home calls are not encouraged. If the doctor finds the patient too ill to come to the centre he refers him to a hospital. Patients are also referred to polyclinics for special diagnosis and treatment. The Medical Centre also supervises the sanitation and public health of its district for which purpose there are specially trained sanitary inspectors and many thousands of physicians and nurses visiting the schools. Children in the schools, workers in the factories and farmers on the land are given regular periodic examinations. In fact, the supervision of the individual's health begins with pre-natal care in the 10,000 or more maternity and child welfare stations. Millions of children are cared for in nurseries and kindergartens—there were but a handful under the Czars. Expectant mothers are examined and instructed in the maternity centres. Childbirth takes place in maternity hospitals, whether the woman lives in the country or in the city. The day of the old peasant midwife with the shocking maternal and infant death rate is over and done with. The whole scheme of health care and medical treatment under the Soviets sums itself up in prophylaxis and in the institutional treatment of disease and disability. The doctor is a member of a group whether he is working in a district medical centre, in a polyclinic, in a hospital or in one of the 300 research institutes carrying on valuable scientific work in many parts of Russia. The average doctor's salary is equivalent to about \$1,500 to \$3,500 annually. He gets four weeks' vacation with pay each year, three months' postgraduate work at government expense every three years, and he is eligible for sick benefits and old age pensions out of the Social Security Funds. His job is not only to treat the sick but to keep the well people well. He works in close relationship with the District Health Board which is elected by the local Soviet and of which he is a member.

Housing, working conditions, industrial hazards, nutrition, social disease, crime, prostitution, alcoholism, superstition and ignorance—all these are factors in health and disease and they are all in his province as health officer and physician.

According to Soviet ideology, economic conditions, lack of work, idleness, overcrowding, poor diet, poor working conditions, slum neighborhoods—all these

are the basic factors in disease and crime. So the doctor in treating his patients tries to go to the source and fountain head of the trouble. For that he has the cooperation of his medical centre, his polyclinic, his hospital, his teams of colleagues and his nurses and assistants. Incipient cases requiring special attention are sent to day or night sanatoria so that their work may not be interrupted if possible, while they are undergoing treatment. Convalescents are sent to any of the innumerable resorts and rest houses, many of them remodeled palaces and estates of the old nobility and still more of them constructed in the last few years in the Crimea and the Caucasus.

The practicing physician may train himself to specialize if he chooses or he may devote himself to research in conjunction with or independent of his regular work.

You are, of course, interested to know who is in the driver's seat of this vast and complex medical organization.

At the head of it is the All-Union Commissariat of Health, the director of which is a member of the all-powerful Council of Commissors. The Health Commissariat and its Chief are selected by the Presidium or Executive Council of the All-Russian Soviet Assembly, consisting of delegates representing all the local Soviets throughout Russia and the federated republics. Each of the 11 federated republics constituting the USSR has its own Commissariat of Health which exercises certain regional autonomy but which is an integral part of and subordinate to the All-Union Commissariat.

All health and medical care in Soviet Russia, whether prophylactic, curative or convalescent, is free. Every man, woman and child is entitled to receive that care without charge. Whether the physician is called to the house, whether the patient applies for treatment at his factory medical centre or the district medical centre, whether he is referred to a specialist in a polyclinic or sent to a rest home, or admitted to a hospital—he does not pay a kopek. That is, not directly. His government pays all the costs out of State funds and part of the cost is contributed by the Social Insurance Fund in which every worker, every farmer, every professional and every government employee is insured. The total annual budget for this gigantic medical scheme is about 15 billion roubles. Can the Government afford it? Please remember that in Russia the State—

that is, the Supreme Soviet acting through its various Commissariats, trusts and collectives—the State is in business. No one else is.

All mines, factories, shops, railroads, shipping, farming; every enterprise, industrial, commercial, agricultural and cultural is owned or controlled by the State. Whether for weal or for woe, that is the fact. And State funds pay for clinics, hospitals, sanatoria, maternity and child welfare, sanitation, housing, recreation, and everything else included in the medical program.

It is a gigantic machine; it is centralized, unified and has final authority over all its agents, employees and component parts. Does it work? I believe that a comparison of health and medical conditions under the Czars with those that have been created and have developed under the Soviets can leave no doubt in anyone's mind as to which system has contributed most to the health and well-being of the 170 million people in Soviet Russia. The Nazis have wantonly wrecked and destroyed some of the finest medical institutions erected out of the self-sacrifice and toil and self-denial of the Russian workers and peasants. But these will be rebuilt, are already being rebuilt and restored wherever the invader is being beaten and driven out.

Are the physicians in Russia happy under the Soviet system of State medicine? Do they have enough incentive to work and study and experiment and advance? Again the record answers in the affirmative. It must be borne in mind that the vast majority of medical workers in Russia have never known private practice and are naturally adjusted to this system in which they have grown up and have been trained. They are members of the medical institutions instead of having their own private offices; they take pride in their group and its accomplishments, they do not earn much money but they have the compensations of material security, vacations, post-graduate study and old age protection. Moreover, it has been demonstrated in many of our own endowed scientific institutions that there

are other incentives in medical and research work as potent as the prospect of financial remuneration and material success.

Finally, the question will be asked and is being asked in the present controversy raging around the proposed Wagner-Murray bill—do we here in our free and democratic country need a system of socialized medicine to bring to our people the blessings of health and adequate medical treatment?

I will not venture, in this paper to plunge into this controversy but will merely point out that the conditions here are vastly different from those that prevail in Russia today and the circumstances that existed when the Soviets took over power. The Russian people with few exceptions never lived under conditions favorable to a decent and well-rewarded system of private medical practice. The Soviets did not come to destroy a well-running and thoroughly efficient medical organization such as we have functioning in this country. Before scrapping this magnificent medical machine of ours and adopting a contraption subject to the control and machination of our politicians, let us physicians put our minds and energies to the study and investigation of conditions in our medical domain requiring alteration and improvement. We have the problem of rural regions inadequately provided with medical and public health assistance. We have the problem of the white collar worker, the middle class citizen on a moderate salary or income, needing hospital insurance and some form of medical insurance to level off the peaks and valleys of ill-health and the cost of medical care. We need more medical and health centres throughout the country especially in rural areas so that physicians in those areas may have available the necessary scientific facilities for diagnosis and treatment.

And I am firmly convinced that the American medical profession which has already given our people the highest health level and the lowest mortality rate in the world can solve these problems without sacrificing its democratic and scientific heritage.

THE PHYSICIAN'S RESPONSIBILITY AND RELATION TO THE COMMUNITY*

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After one has spent thirty-three years practicing medicine, he feels he has the right to reflect on the past and review some of the changes that have taken place around him; then state some of the obligations of a physician as he sees them. I will endeavor to discuss this briefly under three headings: The Physicians' Relationship to Each Other; The Physician's Responsibility to his Patients; and the Patient's Responsibility to his Physician; lastly, The Physician's Responsibility to the Public as a Whole.

When I began the practice of medicine in 1910, the majority of physicians were bound together in cliques or groups centered in staffs around hospitals. It was certainly true of Norfolk and this city (Richmond). They were rather selfish, and had very little to do or say to each other. They accepted consultations rather unwillingly, except in their respective groups. Once they got hold of a patient, they acted like it was their patient for life. I am glad to say all of this has changed. Physicians today, as a whole, are on better terms and in closer relationship to each other than ever in the history of medicine. As scientific medicine progressed, the medical profession was being drawn closer together. Attending medical meetings, staff meetings, smokers and playing golf have played no small part in helping to bring this about. I know of no one thing that is more stimulating to a physician or more broadening of his views than the regular attendance of medical meetings. I do not believe one ever loses anything by it.

The physician's responsibility to his patient is a solemn one, and should be bound with secrecy and loyalty. I feel that one should be just as honest with a patient professionally as he would be with his pocket-book; tell the truth as you see it, and do not hesitate to say you don't know. When a patient consults a physician, he comes because he wants to know what is wrong, and he has a right to know. If you keep the information to yourself, he has gained nothing, so far as he is concerned.

There are two exceptions—if you suspect malignancy, or the patient is critically ill, it is best that the patient not be informed of the real seriousness of the malady, but be sure and tell some member of his family, or someone else will, and that will put you in a very bad light. If you are in doubt as to what you are dealing with, do not hesitate to ask for a consultant. It is much better for the physician in charge to ask for a consultant and select the one who will give him the most and best help in the case at hand, than for the family or some outsider to ask for consultation and insist on getting someone that is not agreeable to you and probably knows nothing about the condition at hand. Be fair and square with your patients at all times, but do not think that you own them; they have a perfect right to quit you at any time for another, but this should be handled in the proper way. A physician has the right to refuse a call at any time, but once he has accepted a case he should see it through that illness, regardless of the consequences, financial or otherwise, unless he be discharged.

The public as a whole do not seem to be bound or as loyal to their family physician as they were fifteen or twenty years ago. I guess the development of the specialists has had a good deal to do with this. The past twenty-five years has been the highlight of specialisms. No doubt they have rendered a great service, and still are making great strides in scientific development. The specialist and laboratory research worker are to be given the real credit for scientific medical progress. At the same time they are mainly responsible for destroying that close relationship that formerly existed between the family and the general practitioner. Personally, I feel that the day of specialism has reached its peak, and there is going to be a swing back to the general family doctor. After the war there should be a great future for the general practitioner.

My advice to every family when they move in a new community is to select a family physician, go to see him and get acquainted. Select one you can trust and have confidence in and stick to him. People as a rule put more confidence in their family

*President's address presented at the meeting of the Seaboard Medical Association of Virginia and North Carolina in Richmond, Va., November 30-December 2, 1943.

physician and the Christian Minister than in any other. If at any time you feel like you would like to see a specialist, consult the family physician first and let him advise you. It will be much more satisfactory in the long run and more economical. Specialists at times, like others, carry things too far. Recently I heard of a case where I think the family doctor and the consultant were both wrong. A child was taken quite sick; the family physician was called. He diagnosed the condition as acute respiratory infection or influenza, and prescribed the treatment. He saw the child regularly. On the fifth or sixth day, the child had not improved as rapidly as the mother thought it should, so she called the physician in quite an agitated frame of mind, told him she was not at all satisfied with her child's condition and she wanted to change doctors and wanted a specialist. The doctor replied that it was all right with him, he would have nothing further to do with the case and to call whomever she wanted. She called the specialist, but he refused to come. She finally called the first physician again to get the specialist. He kindly did so, and the specialist came, examined the child and reported to the first physician in charge, but refused to have anything further to do with the case. Finally, a third physician had to be called to take charge of the case. How much simpler it would have been had the family physician anticipated the mother's feelings and requested a consultation; or if the mother had spoken to him in person rather than reprimand him over the 'phone. Much of a doctor's time and energy is wasted by having to answer numerous and, too often, useless questions over the 'phone. So often the doctor is misunderstood, if the patient happens not to get the information desired. When a change is desired, the first physician in attendance should give the second physician all the information about the patient he has, and cooperate in every way.

This brings up the question of the present day cost of medical care, and it has increased by leaps and bounds during the past thirty years. Many things have helped to bring this about. One is the cost of medical education; this has greatly increased and everything with which the doctor has any connection has greatly increased. May I use a personal illustration: my first year in the medical school in 1905 cost three hundred and fifty dollars. My son's

first year in 1940 cost over eleven hundred dollars. At the present time the government is spending from eighteen hundred to two thousand dollars for each medical student per year. My first year's total expense for operating my office was between three and four hundred dollars. My total office expense last year was over five thousand dollars. This means that many people will have to be seen who pay their bills at a great increase in cost.

I feel that the public is as much, if not more, to blame for the increase in cost than the profession. They demand so much more—often the impossible. Twenty-five years ago, if a physician was called to see a case and found the patient with fever, having chills or pains in the joints, you could tell the family you think the patient has a continued fever, malaria, or rheumatism, and put him on treatment while you were making the true diagnosis. He continued under your care until he got well, with no further questions asked. Now, it is a different story. You must make a positive diagnosis the first visit, certainly the second, or the family is all up in arms. They want a specialist for this and for that, special nurses, and usually express the desire to spare no expense, until the bills begin to roll in; then they begin to grumble about the high cost of medical care, when they themselves are responsible. The American people are too restless, living too fast; they want too much and are too demanding. This war is going to bring about many changes in our entire way of living, it will teach us many things that should be helpful. One thing I sure trust we will learn, that we cannot get everything we want when we want it at all times. We must learn to let things take their course.

The physicians' responsibility to the public at large is a momentous one and we should not hesitate to assume that responsibility. They are better educated and better trained than the average layman. In fact, their training period is longer than that of any other profession. Much more is expected of us; we should take the lead, especially in public health matters. Do not forget that part of the expense of our education is borne by the public. We were educated at State Institutions partly supported by public funds. We should return that to the public by public service. We should practice preventive medicine at all times, trying to prevent sickness as well as treat diseases. This can best be done by education,

over the radio, through the press, but best by daily contact with your patients. I feel that in the past we have kept the causes and nature of the diseases too much to ourselves and not discussed them freely enough with our patients. At the present, most of the information concerning medicine is put out by the lay press, public health workers (not physicians), and through various kinds of advertisements and cultists. Consequently, the information in most instances is smattering and inaccurate. The physician must assume the responsibility of informing his patients on all matters pertaining to public health. At times a little knowledge is a dangerous thing.

We should also let people know who we are and where we are. It is time we drop the prefix "Dr." and use the term "Physician" or "M.D." after the name. Any quack or irregular practitioner with a six weeks' certificate can get his name in the paper or telephone directory with the prefix "Dr." A stranger coming to town looks in the 'phone book for a physician and is just as apt to get an irregular practitioner as to get a physician. I also feel that a physician who has had special training in any of the specialties should be permitted to put this suffix after his name in the telephone book and on his office door. This should be considered informative and not as advertising. It is information the public is entitled to and should have. This would help to reduce the cost of medical care. Those who are entitled to this distinction should be first passed upon by the local medical society.

In discussing this subject, one would naturally have to bring up the subject of sectarian medicine, as osteopaths, chiropractors and other classes of irregulars. Dr. Charles F. Gormely, of Providence, in an address on Medical Ethics delivered before the student body of Tufts Medical School, made the following statement, "The cultists you need not concern yourself with, for they are not your colleagues, and in this section of the country we do not invite or accept them in our medical societies. We do not consult with them professionally, and you have no ethical duty to them, beyond that of fine social ethics."¹

Dr. Lincoln Davis, of Boston, while discussing a similar subject at the same Medical School, but on another date, makes this statement, "The thriving practice of osteopaths and chiropractors indicates that there is something here of real value which the

medical profession would do well to investigate, separating the wheat from the chaff and incorporating what is sound in its own armamentarium."²

Dr. Frank Smithies, of Chicago, in an address delivered before the Pittsburgh College of Physicians in April, 1924, makes this statement: "Moreover, the people are going to demand a 'say' in our medical situation: what if preventable deaths follow upon a regular physician refusing to consult with a cultists or to cooperate in the management of a patient? The legal aspect, the humanitarian and ethical phases of the questions are, indeed, grave."³

I am inclined to take sides with Dr. Lincoln Davis and Dr. Frank Smithies, certainly in part. I see no reason why we should not consult with osteopaths. We have all to gain and nothing to lose. They are our keen competitors; many of our patients go to them (while they are still under our care). Their training, while not as good, is very similar to ours; they are represented on our examining boards and take practically the same examination. Would it not be better if we could get together and discuss the patients' problem. The patient most surely would be the benefactor and the public would hold us in a little better light. A better understanding and a closer relationship with the public should be our aim. Other cultists we would ignore.

In the past, we have depended on fighting the irregulars entirely by legislation. Every year we must have someone on hand to fight this bill and that bill. I do not feel that this is the whole answer. The public has the idea we are trying to persecute them; it keeps them before the public eye, giving them much free advertisement. I believe they are the gainers and we the losers. We must use some other tactics. Educate the public in what we have to offer, and what is best for them. Stay out of the courts and leave them to the law makers.

There is a bill before Congress now to socialize medicine; whether this bill passes or not, I do not know. I doubt that it passes in its present form. I sincerely hope not. If this bill does not pass, another and still another will be introduced until the present method of administering medical care is changed, because the public demands it. Many people are clamoring for a change, trying to get something for nothing. We will all have to admit that the present method of medical care is not adequate to all classes of people and in many instances the

cost is more than the traffic can bear. In the past, the indigent and low salaried group were taken care of by free clinics which were partly supported by philanthropy, but with the present high taxes, this is going to be a thing of the past and the indigent will have to be taken care of by the government, local, state, and Federal combined. For us to sit idly by and take no part in this change of program would be foolish. To write our Senators and Congressmen to vote against this bill or that bill without stating our reasons or offering a better one would be gross ignorance and childish. Criticism which is not constructive is worse than no criticism at all.

We should have a public relations committee appointed by the state societies and the American Medical Association pay them, if necessary, to keep constantly in touch with the Surgeon General's Office and the officials in Washington, and help them work out a program that will best serve the American public, and not leave it to the politicians. I am glad to say our State Society is taking a step in this direction.

Some form of prepaid medical care for certain groups will have to be worked out. Hospital insurance is working very successfully in many communities. There is no reason why insurance for medical care should not do likewise. It would be far better for the profession if this plan could be worked out by our own group, rather than leave it to labor organizations and the law makers. Our mission should be to help mold legislation and not merely to fight and block legislation.

I recently read an article entitled "The Doctor's Stake in Union Sponsored Health Plans," in which it stated that the C. I. O. and A. F. L. locals are now operating a variety of prepayment schemes. Their fees were as follows: first office visit \$1.50, to include a complete check-up with Wassermann and urinalysis; the second visit \$1.00; home visits \$2.00; after ten P. M. \$3.00; surgeon's charge \$25.00 for minor operations and \$50.00 for major operations.⁴

We will have to admit that such fees are ridiculous, to say the least. Any physician who attempts to practice medicine under such conditions will have to stay constantly on the job in order to keep body and soul together. He will not have any time for recreation or study, nor will he be able to attend medical conventions. Consequently, he will decay prematurely, both mentally and physically.

There always has been and always will be unexpected complications to arise in treating diseases, especially surgical cases, which makes the expense much more than is anticipated. Some form of prepaid medical care and hospitalization will help those who are in the low income bracket to bear part of the burden.

All of us know that some exorbitant fees charged from time to time by certain groups throughout the country have helped to put the profession in bad repute in regard to charges. No doubt some fees are out of proportion, and will have to be adjusted. For instance, I have always felt that surgical fees were out of proportion to medical fees. It takes a great deal more time and just as much skill to handle a case of pneumonia or coronary thrombosis as it does to do a simple abdominal operation, yet, if physicians were to charge anywhere near the same fee as the surgeon, people would think we were robbing them.

I feel that some adjustment can and should be made in x-ray work. At times the fees seem to be out of proportion, as to the material used and the time it takes to do the work. I am mindful of the heavy capital outlay which the apparatus represents. Do not for one moment think I am trying to make light of Roentgenologists, nor the part they play in scientific medicine. They have revolutionized the methods of diagnosis and treatment in the past twenty-five years. Because it is so necessary, it should be made available to all people at all times when needed.

We are working as a group known as organized medicine. If we can regulate some things, why can we not regulate and standardize fees. Some adjustment is going to be made. It would be far better to make the changes ourselves than to have someone else do it for us.

In conclusion, may I quote a few lines from the pen of my present pastor, Dr. Edward J. Rees, Minister of Ghent Methodist Church, entitled

"MY DOCTOR"

"Of all the men in town or street
There's no one whom I'd rather meet,
There's no one who can ever beat
My Doctor.

"He's with us in our darkest hour.
For him we call in sun or shower.
Who's with us when the storm clouds lower?
My Doctor.

"He hears our joys and knows our woes,
We trust him in the darkest throes,
We'll love him—pay him, too—who knows?
My Doctor.

"And when my days on earth are run,
And looking toward the setting sun,
I'll call and ask him, 'Can't you come?'
My Doctor."

Be true and loyal to your patients, and in most instances they will be loyal to you.

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Colds.

Franklin's theories on the causes and cures for the common cold are essentially the sum total of what anyone today knows about that commonplace and most widespread of diseases.

Even though he could never have heard of germs or virus, Franklin deduced that colds were carried by "particular effluvia in the air". He also believed that colds were contagious.

His theory maintained that colds were spread by crowds gathered in unventilated quarters and breathing foul, stagnant air. His theories on air conditioning were developed as a corollary to this observation.

In illustrating how colds may be prevented, Franklin advised frequent bathing (in an era when baths were regarded as unwholesome), regular phy-

sical exercise, sound diet and fresh air. No modern physician could give sounder advice.

Not only was Franklin pre-occupied with the cause and prevention of the common cold, but he dabbled in pharmacy to devise a treatment for it. When Samuel Johnson was stricken with "the fever and ague", Franklin advised him, in a letter dated September 13, 1750, not to "omit the use of bark too soon". He also added, "Remember to take preventing doses faithfully. . . . If you take the powder mixed quick in a tea cup of milk, 'tis not disagreeable, but looks and even tastes like chocolate. 'Tis an old saying: That an ounce of prevention is worth a pound of cure,—and certainly a true one, with regard to the bark." (From Benjamin Franklin's Contributions to Medical Science, prepared by the National Franklin Committee of Philadelphia.)

BREEDING BETTER PEOPLE FOR PEACE: HUMAN NATURE CAN BE CHANGED

J. SHELTON HORSLEY, M.D.,
Richmond, Virginia.

There are, of course, many factors that go to make up a satisfactory peace—the terms of the peace treaty, the method of enforcing it, the economic arrangements between nations, the application of the good neighbor policy—but probably the most important single factor is the kind of people who must implement these agreements. To those who are highly emotional with low intelligence, who are unscrupulous and guided solely by greed and the desire of immediate prosperity, covenants between nations mean nothing.

The exploitation of the people by dictators, demagogues, scheming politicians, is amply illustrated by the Axis powers in the present World War. Nor are we, in the United States, entirely free from this influence. James Truslow Adams in "The Epoch of America" has conclusively shown that at least two of our wars—the War with Mexico and the War with Spain—were quite unjustifiable and the problems in dispute could have been readily settled by efficient statesmanship, had it not been for an inflamed public opinion created by those who played solely upon the emotions. Men like Huey Long could not have exerted their influence without an appeal to rabble.

As the outlook of World War II increasingly indicates victory for the United Nations, the presenting problem of peace looms large. The failure of the peace after World War I is lamentable. The utter disregard by the Axis group of any treaty or agreement shows how futile eventually would be the most carefully drawn covenants unless they are fully endorsed by the people. However, little regard has been paid to the type of individuals who make up a nation while hair-splitting meticulous documents attract chief attention.

Any sensible and observant farmer knows that the only way to raise good animals is to breed them from the best of stock and not from the runts. There seems to be little hope that scientific discoveries such as the invention of the movies, of radio, of radar, the substitution of aluminum for steel, or of magnesium for aluminum will make better human beings. A decrease in death rate from disease does

not itself in any way improve the status of humanity. These things may prolong life or make us more comfortable, but they do not change human nature. The cultivation of a type of mind that will accept conclusions only if logically reached is a consummation devoutly to be wished, but with the present mental equipment of many human beings a rather small percentage of them is competent to develop such a mind. Occasionally there seems to be some mutation by which a superior individual will arise from inferior parents, but this is so exceptional and so inexplicable that it should not be counted the rule in a biologic way.

We are now seeing in Congress and elsewhere the same frictions, the same narrow views of the future, the same efforts to attain overwhelming power and prosperity for one's own nation regardless of what happens to others, the same glorification of nationalism as opposed to internationalism as has heretofore so tragically existed. As we look back on the founders of our republic it seems more and more marvelous that we had such able and wise men to guide the country through its early years, and yet even then the fight for freedom and establishment of a constitution met with bitter opposition. It is probable that in pioneer days the hardships attracted men of a superior though by no means perfect mould, and the lack of distraction by modern inventions permitted concentration upon the important conditions that were being discussed. Then, too, it is probable that to some extent the law of evolution was operating. The survival of the fittest would not infrequently cause the fittest to survive.

At present, however, we are largely breeding from the runts. One of Mussolini's chief ideals was large families. The moron with no intelligent comprehension of affairs but easily inflamed by emotions and merely furnishing cannon fodder was his desirable type. Hitler wishes a strain of human beings with a perverted paranoiac tendency that he can exploit.

Professor Isaiah Bowman, President of the American Association for the Advancement of Science, says (*A.A.A.S. Bulletin*, July, 1943): "We are fight-

ing with our brains: we are not fighting chiefly with old tools. This is a lesson of mortal earnestness for the future. The products of science go everywhere. Secrets are short-lived. But scientific habits of mind, the encouragement of science as a field of creative endeavor, may again be our salvation in time of peril. Whether it is the high ends of a common humanity in a cooperative world or whether it is defense in time of war that we have in view, exploring science, high courage, and boldness are a trinity of qualities that will benefit the world of the future immeasurably if they are built into the foundations of a common humanity, a world for all of us and not for any one race or party or flag."

The population is now largely augmented by the biologically lower classes. This may include the multi-millionaire whose I.Q. is far below normal. It is well known that the moron type, imbeciles, and the mentally unstable are more prolific than the higher grade of intellectual individuals. Birth control has hardly touched the lower biologic classes who frequently have no sense of responsibility and restraint and often do not possess the intelligence or the desire to use contraceptives. The families of more intelligence, of better character and higher ideals are usually small and in the course of time their progeny will be greatly outnumbered. It is vain to expect much change merely by moving groups of people geographically from one point to another. To be sure, after long periods of time environment may to some extent change the race. The circumstances may so alter that new characteristics arise. This, however, is almost geologic in time. Environment alone is not enough.

How, then, can we hope for a true civilization based on a proper regard for the rights of man and of nations unless it is founded upon the attitude of the majority of individuals who are not chiefly emotional but who can reason with sufficient accuracy and logic to determine what is right and what is wrong in the conduct of human affairs and in the attitude of nations to each other?

In order to breed better people we must limit the number of the lower biologic classes, the morons, the imbeciles, the psychotics, the criminally insane. This to some extent is being attempted now but in a very limited way. We are scarcely scraping the surface.

On January 1, 1942, twenty-nine states in the United States are recorded as having sterilization laws. In New York the law was repealed. The oldest law was passed in Indiana in 1907; the most recent in Georgia in 1937. The total number of sterilizations by a simple method of severing and tying the tubes from the ovaries or from the testicles was 38,087 to January 1, 1942. The ovaries and testicles are left intact. The state having the largest number of sterilizations, 15,220, is California. The sterilization law was passed in California in 1909. The next largest number of sterilizations, 4,227, is in Virginia, though the Virginia law was not enacted until 1924. According to Dr. J. S. DeJarnette, former Superintendent of the Western State Hospital, Staunton, Virginia, and one of the most enthusiastic supporters of the sterilization procedure, there have been 377 sterilizations in Virginia from January 1, 1942, to June 30, 1943. This makes a total for Virginia to June 30, 1943, of 4,604 sterilizations.

There are rather stringent laws concerning the marriage of syphilitics. This is desirable, but it cannot be compared in importance to the burden from the almost unimpeded progeny of the lower biologic types. Syphilitics can be cured, but a race of morons, psychotics, imbeciles, and criminally insane cannot be relieved except by extermination. Prevention is by all means better than cure. The confinement for life of the criminally insane, confirmed epileptics, and imbeciles in an institution is a poor way of treating this matter, when their birth might be prevented by intelligent legislative control and an enormous taxation of the public avoided.

Marriage licenses should be carefully inspected and controlled and common law marriages investigated. It is more important by far to have a competent psychiatrist pass upon the desirability of a marriage than to have a blood test of the applicants made for syphilis. If the candidates for marriage are moronic or psychotic or if they come from markedly moronic or psychotic families, the marriage license should either be refused or it should be granted only if the applicants are sterilized. Sexual intercourse is not in any way affected by severing and tying the tubes, but the population of the world by the offspring of these individuals is prevented.

Naturally, it will take a long time to change human nature in this way, but if we don't begin sometime it will never be done. While we cannot

expect Utopia, we may eventually attain a majority of intelligent men of good will. Then we may look forward to a permanent and just peace.

When we have a people who can be easily swayed by dictators, demagogues, or unscrupulous politicians, there can be no hope for a universal proper civilization—and such a civilization excludes war. Unless the majority of individuals are capable of

logical thinking and of refuting preposterous and vicious doctrines, the future for humanity will be dark indeed. Unless breeding ceases to be chiefly from the biologically lower types of human beings, new inventions, new philosophies, and new treaties will be futile.

St. Elizabeth's Hospital.

Case Finding in Tuberculosis

Has recently been undertaken on a stupendous scale. Careful estimates based on actual findings to date indicate that by the end of this year approximately 25,000 persons will have been diagnosed as in need of hospitalization who in ordinary times would not have been suspected of having tuberculosis. The armed forces are expected to include more than eleven million men by the end of 1943, all or whom will have been x-rayed except the first few hundred thousand inducted. The U. S. Public Health Service is carrying on an intensive case-finding campaign among certain groups of workers, which has been supplemented by local and state health agencies. Most of these newly found cases are asymptomatic; probably only a few have a history of contact or have ever been examined previously.

These estimates point to the need for greatly increased sanatorium facilities. For some time sanatoria have been closing wards and curtailing activities because of the lack of trained personnel. The

mere effort to keep these hospitals going in accordance with acceptable standards represents a serious undertaking. When to this is added the urgent need for greatly increased facilities, the responsibility indeed becomes tremendous. (Mary Dempsey, *Am. Rev. of Tb.*, July, 1943.)

Medical Instruments.

Franklin also used his inventive genius in the field of medicine. His brother, John, wrote him of his need of a flexible catheter, a medical instrument, tubular in shape, used to draw off urine for infected bladders.

In December, 1752, Franklin devised the first flexible catheter known to American medical history. Franklin wrote about it to his brother as follows:

"I went immediately to the silversmith's and gave directions for making one (sitting by till it was finished that it might be ready for this post)." (Benjamin Franklin's Contributions to Medical Science, prepared and distributed by The National Franklin Committee of Philadelphia.)

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

This is a case of a thirty (30) year old white primipara who showed no abnormality from the fourth to the seventh month of pregnancy at which time the blood pressure went up and albumin appeared in the urine. Her condition responded well to bed rest and conservative treatment. Later during the month the blood pressure went to 200 and the albumin to 4 plus. After hospitalization and diet the pressure went to 150. (Diastolic pressures were not reported.) She was evidently discharged from the hospital following the first admission since the report states that she was admitted six (6) days later having convulsions. The blood pressure at this time was 200/120 and the albumin was 4 plus. Morphine, atropine, and nembutal were followed by glucose I. V. On the next day magnesium sulphate by mouth and magnesium sulphate and glucose were given I.V. Improvement followed as evidenced by having fruit juices taken by mouth on the afternoon of that day. Magnesium sulphate and nembutal were continued by mouth for six (6) days until the patient seemed definitely improved with the blood pressure 160/100. At this time, a bag was inserted and expelled fifteen hours later with the cervix "1/2 dilated". The patient seemed to be completely exhausted after expulsion of the bag. Under ether anesthesia a manual dilatation was done and a living infant delivered by version and extraction. There was a second degree laceration of the perineum. Removal of the placenta twenty (20) minutes after delivery was followed by profuse bleeding. Pituitrin and ergotrate were given and bleeding continued at intervals until death occurred two (2) hours, fifteen (15) minutes postpartum—eight days after admission to the hospital.

This has been classified by the Committee on Maternal Health as a preventable death. The patient gave warning that she was toxic and responded to conservative treatment. After the onset of convulsions, she still showed marked improvement under

conservative treatment. Opinions vary as to the amounts and concentration of glucose and magnesium sulphate that should be given. Good results are obtained with a wide range in dosage. Regardless of the method and amount of these drugs, this patient improved—at least clinically. The condition of the cervix was not stated. The patient was estimated to be eight months pregnant and the baby weighed five (5) pounds one (1) ounce. She was likely not at term. While continued improvement was being shown, the indication was to direct the efforts toward the symptomatic treatment of the toxemia and disregard the baby. The patient died bleeding after bag insertion, manual dilatation, and version and extraction. The laceration of the perineum was repaired but there was no comment as to whether an examination of the cervix was made or the probability of a ruptured uterus. A lacerated cervix was most likely. Intravenous glucose was given following the bleeding. This is a questionable procedure when the source of the blood is not known since the addition of fluid may hasten the loss of blood. Blood may have been difficult to obtain at 2:00 A.M. but a transfusion was in demand. Bag insertion in a toxic patient is an additional hazard. The fundus was massaged but the bleeding continued. The uterus may contract even though it is ruptured extensively, but the bleeding is more likely internal. Pituitrin in toxic patients is questioned since there is a possibility of retention of fluids. Moving this patient from the delivery room was an unwise procedure. Eclampsics are poor risks for general anesthesia.

The treatment in this case, up to the time of the induction of labor, must be accepted if for no reason other than the fact that the patient improved. The treatment following this time was done without either indication or justification.

PUBLIC HEALTH

I. C. RIGGIN, M.D.,

State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for December, 1943, compared with the same month in 1942, and for the period of January through December, 1943, compared with the same period in 1942, follows:

	Dec.		Jan.-	
	1943	1942	Dec. 1943	Dec. 1942
Typhoid and Paratyphoid Fever	6	10	216	248
Diarrhea and Dysentery	438	58	5,866	4,529
Measles	2,076	57	12,594	4,930
Scarlet Fever	217	181	1,847	1,637
Diphtheria	34	67	396	699
Poliomyelitis	1	2	61	43
Meningitis	37	34	839	185
Undulant Fever	1	2	37	34
Rocky Mountain Spotted Fever	0	0	55	47
Tularemia	9	8	55	41

MORTALITY HAZARDS OF THE PRESCHOOL AGE

When a child reaches the preschool age (1 to 4 years), he enters a much safer period, so far as mortality is concerned, than infancy. However, the death rate for the preschool child is consistently higher than that for the child of school age or for the adolescent. Deaths among children 1 to 4 years of age in Virginia during 1942 totaled 585, with a rate of 2.9 per 1,000 population. For all ages, the death rate was 10.3.

In spite of the great improvement in mortality experience during the past quarter of a century, nine leading causes of death among preschool children continue to be of major public health importance. This group of causes comprises influenza and pneumonia, diarrhea and enteritis, tuberculosis, diphtheria, whooping cough, congenital malforma-

tions, diseases of the ear, nose and throat, and accidents of all types. In the State during the year, 399 deaths resulted from these causes—more than two-thirds of all deaths of children 1 to 4 years.

Influenza and pneumonia, causing 117 deaths of preschool children, occupies first place in the rank of leading causes. Successes attained in pneumonia therapy, however, promise a substantial reduction in the death rate for this cause.

Accidents according to numerical importance ranked second. All types of accidents, including falls, burns, drowning and poisoning took a death toll of 100 children of preschool age. In addition to these, 17 children died as a result of automobile accidents.

Although the reduction in mortality from diarrhea and enteritis has been phenomenal, the gastrointestinal infections are taking a comparatively high toll of children 1 to 4 years. This cause still ranks third, and was responsible for 53 deaths for the year.

Tuberculosis, ranking fourth among the nine causes of death in the preschool age-bracket, took 39 lives. A significant proportion (21) were due to tuberculosis of the meninges and to disseminated tuberculosis.

The typical childhood diseases, diphtheria and whooping cough, ranked fifth and sixth, respectively. There were 26 deaths due to diphtheria and 22 due to whooping cough, the peak of mortality for these diseases occurring in the preschool period.

Deaths from congenital malformations, eighth in rank, numbered 13.

Last in order of important causes are the diseases of the ear, nose and throat, which resulted in 12 deaths.

That patient is not likely to recover who makes the doctor his heir.—FULLER, 1732.

Who shall decide when doctors disagree?—POPE, 1732.

God heals and the doctor takes the fee.—FRANKLIN, 1736.

The best doctor is the one you run for and can't find.—DIDEROT, 1746.

MILITARY MEDICINE

Virginia Doctors in Service Supplement 6

This is the Sixth Supplement to the list of Virginia Doctors in Service, the original list appearing in the July 1942 MONTHLY, with supplements in September and October 1942, and January, April and September 1943. Names are given alphabetically with home addresses, in view of constant changes in location and rank.

The MONTHLY will appreciate it if any reader will advise of omissions that they may be included in a future supplement.

Members of Medical Society of Virginia

Dr. Julian R. Beckwith, Clifton Forge.
Dr. C. C. Chewning, Richmond.
Dr. Elmer R. Moorman, Kilmarnock.
Dr. Allen W. Pepple, Richmond.
Dr. Jesse James Porter, Norton.
Dr. J. Gordon Rennie, Pulaski.
Dr. Early T. Terrell, Jr., Richmond.
Dr. William E. Tomlinson, Richmond.

Dr. William H. Wood, Jr., Charlottesville.
Dr. I. S. Zfass, Norfolk.

Non-Members

Dr. Thomas Stillwell Edwards, Charlottesville.
Dr. Thomas E. Knight, Farmville.
Dr. Charles D. Schillin, Charlottesville.
Dr. Spotswood Stoddard, Richmond.
Dr. Francis R. Whitehouse, Lynchburg.

Promotions in the Service.

The following promotions of Virginia doctors in the Service have just been noted:

Dr. Charles M. Caravati, Richmond, to lieutenant colonel.

Dr. Henry L. Bastien, Arlington, to major.

Dr. Patrick H. Drewry, Richmond, to major.

Dr. Ayer C. Whitley, Palmyra, to major.

Dr. John Philip Eastham, Culpeper, to captain.

Dr. Brooke B. Mallory, Lexington, to captain.

Dr. Wyatt Earle Royce, Covington, to captain.

Dr. James W. Tankard, Hilton Village, to captain.

NEW MEMBERS

New members of the Medical Society of Virginia, since the list published in the April 1943 issue of the MONTHLY are:

Dr. Luther Clifton Brawner, Richmond.
Dr. James Marion Bryant, Charlottesville.
Dr. Thomas Spencer Chalkley, Richmond.
Dr. Virgil Jefferson Cox, Galax.
Dr. Leon Richard Culbertson, Charlottesville.
Dr. William Robert Dandridge, Charlottesville.
Dr. William Lee Davis, Norfolk.
Dr. Emerson Day, Alexandria.
Dr. Lyle Ernest Delap, Radford.
Dr. Elizabeth Holt Edmunds, Lynchburg.
Dr. Everett Idris Evans, Richmond.
Dr. Robert Edward Feagans, Fairfax.
Dr. Arthur Binford Gathright, Jr., Richmond.
Dr. Garrett Gideon Gooch, III, Roanoke.
Dr. Faith Janet Fairchild Gordon, Hollins College.
Dr. John Hiner Guss, Staunton.
Dr. John D. Hamner, Jr., Ashland.
Dr. Lyle Jamesson Hansbrough, Front Royal.
Dr. Elinor Beatrice Harvey, Newport News.
Dr. William Franklin Hatcher, Roanoke.
Dr. Harry Heim Henderson, Richmond.
Dr. Robert Beall Hightower, Alexandria.
Dr. Gwendolyn Sully Hudson, Richmond.

Dr. Clarence Porter Jones, Jr., Newport News.
Dr. Lee Spottswood Liggan, Irvington.
Dr. Eleanor Gertrude Mattingly Littlepage, Norfolk.
Dr. Lewis Littlepage, Jr., Norfolk.
Dr. William Eugene Lynn, Front Royal.
Dr. George Winford McCall, Bristol.
Dr. Walter Jones McLendon, Roanoke.
Dr. Nelson Mercer, Blacksburg.
Dr. Mervin Hur Mitchell, Roanoke.
Dr. William Alfred Mitchell, Newport News.
Dr. Thomas Andrew Moneymaker, Arlington.
Dr. Frank J. Morrison, Suffolk.
Dr. John Carlyle Neale, Norfolk.
Dr. Leland Ray O'Brian, Jr., Lynchburg.
Dr. Maurice E. Broadas Owens, Jr., Richmond.
Dr. William Alfred Pinkerton, North Garden.
Dr. Julian Tevy Potts, Newport News.
Dr. Charles Calhoun Powel, Harrisonburg.
Dr. John Taylor Ransone, Salem.
Dr. Hertha R. T. Riese, Richmond.
Dr. William Alexander Simpson, Norfolk.
Dr. Francis Dunnington Smith, Charlottesville.
Dr. Charles Willis Steel, Jr., Suffolk.
Dr. Douglas Best Stratton, Roanoke.
Dr. Ossie Alexander Weatherly, Bluefield, W. Va.
Dr. William Massie Whitehead, Lynchburg.
Dr. George Clegg Williams, Pearisburg.

WOMAN'S AUXILIARY to the MEDICAL SOCIETY OF VIRGINIA

President—MRS. W. CLYDE WEST, Alexandria.

President-Elect—MRS. PAUL C. PEARSON, Turpin.

Recording Secretary—MRS. C. C. SMITH, Norfolk.

Corresponding Secretary—MRS. N. G. SCHUMAN, Alexandria.

Treasurer—MRS. REUBEN F. SIMMS, Richmond.

Chairman, Press and Publicity—MRS. E. LATANE FLANAGAN, Richmond.

Legislation.

There is wastefulness of organization without a purpose. The principal functions of this organization are the extending of authentic information on health, public relations, legislation (reserve force), philanthropy, and social.

With the difficulties in the professional field our purpose seems definite. Let us study to make ourselves intelligent, giving educational material preference over reading for amusement. Let us be accurate in the presentation of facts. Let us learn the health measures already existing in our community and State and those most urgently needed.

There are many points of view as to the possible solution of the world's problems. Prepare ourselves, discuss these and enlist the interest and action of others.

Let us make our conviction known to our Senators and Congressmen and to our President when important bills are pending. This can be done as a body only when authorized by State and County Medical Societies.

The busy wife is an asset to the Auxiliary if she is an Informed Member because she has many opportunities to carry the aims and decisions of the medical profession and keep health leadership where it belongs—with the profession.

The information can be found in the Handbook, the A. M. A. and State journals, the Bulletin, Hygeia, and other reliable sources.

The prayer of the group, meeting recently in Roanoke, was that the Great Physician will "give strength and skill to all those who minister to the sick and prosper the means made use of for their cure."

Dr. Emmett told us that he feels the Auxiliary members, individually and collectively, create and maintain a very useful influence. He said that the medical profession is faced with serious problems.

"The Board of Medical Examiners and the Legislative Committee of the Medical Society have worked to maintain a high standard for the practice of medicine in Virginia." During the last General Assembly there was appointed an interim Commission to study matters pertaining to the right to practice the Healing Art in Virginia. Among things studied were the Basic Science Laws in operation in other states. Please watch this legislation closely, especially since we have been called upon to use our efforts to help prevent the illegal practice of medicine in this State.

But considered more important than this is the Federal bill introduced by Senators Wagner and Murray. This bill should be studied with deliberation and vigilance to determine what system of the practice of medicine is best for the people generally, both physically and mentally. How can the benefits that medical science has developed be utilized to provide medical and hospital care for all? Our assistance must come from an intelligent and enlightened public.

We were asked to follow the Medical Society and create a five-year study committee to work on this subject.

The Platform of the A. M. A. is planned to meet the challenge of adequate medical care through orderly progression in all of the organized fields of public health and in the approach to effective organization of private medical practice and coordination of existing agencies, hospitals, clinics, convalescent homes, etc.

Voluntary Medical Insurance and Hospital Service plans are working successfully and it is felt that these can be expanded to cover the State with government subsidy for the low income groups. In all forms of medical care it is thought best for the individual patient to pay as much of the bills as his funds permit and supplementing the costs of unmet medical care should occur only when necessary to support local private effort consistent with the American system of democracy.

The women's organizations throughout the State are asking the support of the legislators in many fine health bills resulting from the findings of the medical profession. Other measures being supported

are better education and teacher remuneration, extended library service, home demonstration work, jail reform, highway safety and efficiency in government.

It is believed by patience and evolution analysis, cooperation and devotion, by reason and dedication, we can achieve results far beyond the present concept.

Our brothers are giving their life blood. The least we can do is to give every ounce of effort toward the creation of a new world with justice and freedom for all.

MARIE CUNNINGHAM CHICHESTER
(MRS. PEYTON MONCURE)

Chairman of Legislation.

A Founder Brings Messages.

In October, while attending the twenty-first meeting of our Woman's Auxiliary in Roanoke, I was thrilled with pride and delpight when I saw Dr. J. M. Emmett, President of the Medical Society of Virginia, appear before us asking assistance. It seemed to me that on this, our twenty-first birthday, the Auxiliary had really become of age—had really arrived. By dedicating ourselves to safeguarding the needs of human life our women have opened for themselves a door which has given them a wonderful opportunity for service.

As I look back down the years to June, 1922, I recall the various occasions upon which I have been requested to deliver messages of great importance to the auxiliary members. The most vivid of these was in June 1922 when in St. Louis Dr. Leigh and I sat together discussing the possibility of organizing a National Auxiliary. (A resolution for the organization had been presented in the House of Delegates of the American Medical Association by Dr. E. H. Cary and had been referred to the Miscellaneous Committee, of which Dr. Leigh was chairman.) We discussed the question and could find no harm, for at least it would give the women an opportunity of knowing each other while the doctors attended their medical meetings. Dr. Leigh went to preside at his committee meeting and returned later to ask me to find Mrs. A. C. Red of Texas, who had already organized her state, and to give to her the message that the resolution had been passed and for her to call her meeting. The Auxiliary to the A. M. A. was then organized. Each member was asked to return home and to organize her state. Before the next State meeting held in

October 1922 in Norfolk, Dr. Leigh contacted the doctors in Virginia for me. The Auxiliary to the Medical Society of Virgina was then organized, with Dr. Leigh, Mrs. J. Allison Hodges and myself taking part. Mrs. Lloyd Williams was installed as our first president.

* * * * *

Today the Medical Auxiliary has become a tremendous power. Other organizations are looking to us as leaders in health education and the Auxiliary is recognized as an active working body. Our function is to help in the work of enlisting the interest and cooperation of the general public in making more effective the programs of health.

At this time when our doctors are working harder than ever before, giving their lives to this service, I am proud to see their wives are prepared and working side by side with their husbands. However, if we are to keep in stride with the doctors, we must renew our efforts and be trained for any emergency.

The message from Dr. Emmett asks the Auxiliary to become acquainted with the Wagner-Murray-Dingell Bill, which is at present moment in Congress. It is planned to extend Social Security to all of the people of the United States. If this Bill is passed, it will change the nature of medical practice in the United States. In this question regarding the freedom of our doctors, I am sure our women are prepared to serve whenever asked. The Auxiliary has an unlimited influence in our memberships and in our affiliations with other organizations.

* * * * *

One of the messages expressed in Roanoke by our National President, Mrs. Eben Carey, emphasized the necessity for our assistance in recruiting nurses. On July 16, 1943, Congress passed the Bolton Nurses Training Act. This was not the product of one mind, for advisory committees had carefully planned its policies and regulations. Our duty is to guide young women between the ages of 18 and 35 to a hospital training school in our vicinity. She should be at least in the upper third high school or college preferred. Physics, chemistry, and biology are essential.

The Bolton Act provides that Federal funds may be used for maintenance for the first nine months for all students who join the United States Cadet Nurses Corps. This group is known as Pre-Cadet Nurses. The Act also provides scholarships and a

monthly stipend for all students of the corps, at the rate of \$15.00 per month. The Junior Cadet period will be paid \$20.00 for fifteen to twenty months. Senior Cadet Nurses will be paid \$30.00 per month by the hospital training these nurses. Additional information may be obtained by writing to the National Nursing Council for War Service, 1790 Broadway, New York City.

* * * * *

My own message would urge the Auxiliary to consider the youth of today and of tomorrow and what our women can do in this service. General MacArthur has said, "We shall win or we die". The Auxiliary has won. Service was the key.

ALICE LEIGH

(MRS. SOUTHGATE LEIGH, SR.)

BOOK ANNOUNCEMENTS

Books received for reviews are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us same.

Office Treatment of the Nose, Throat and Ear. By ABRAHAM R. HOLLENDER, M.Sc., M.D., F.A.C.S., Associate Professor of Laryngology, Rhinology and Otology, University of Illinois College of Medicine; Otolaryngologist, Research and Educational Hospitals, Chicago. The Year Book Publishers, Inc., Chicago. 1943. 480 pages. Illustrated. Cloth. Price \$5.00.

Psychosomatic Medicine. The Clinical Application of Psychopathology to General Medical Problems. By EDWARD WEISS, M.D., Professor of Clinical Medicine, Temple University Medical School, Philadelphia. And O. SPURGEON ENGLISH, M.D., Professor of Psychiatry, Temple University Medical School. W. B. Saunders Company, Philadelphia. 1943. xxiii-687 pages. Cloth.

Pathology and Therapy of Rheumatic Fever. By LEOPOLD LICHTWITZ, M.D., Lately Chief of the Medical Division of the Montefiore Hospital, and Clinical Professor of Medicine, Columbia University, New York City. Foreword by William J. Maloney, M.D., LL.D., F.R.S. (Edin.), Consulting Neurologist to the City Hospital; Formerly Professor of Nervous and Mental Disease, Fordham University, New York City. Edited by Major William Chester, M. C. New York, Grune and Stratton, Inc. 1944. xvii-211 pages. Cloth.

A Handbook of Psychiatry, by LICHTENSTEIN AND SMALL. W. W. Norton and Company, Inc., New York. Pages 330. Price \$3.50.

There has long been a need for a handbook of psychiatry. Lichtenstein and Small, both of whom have held important positions in New York, have fulfilled this need with very considerable adequacy. There are very few sins of commission or omission considering the work as a handbook. This is the

kind of work that should be not only in the library of every psychiatrist and neuropsychiatrist, but within easy reach of every practicing physician, every medical student, and every mental hygienist. I have but little criticism. I feel that the authors might have, in the reports related, given either more complete reports or simply have mentioned the case in a sentence or two. I feel that the definite insanity of the psychopathic personality might have been more stressed. Also hypothalamic connections could have been more stressed. I also feel that the endocrine factor in psychiatry should have received more attention, especially those conditions connected with pituitary thyroid, and genital gland disturbances. For instance, the epilepsy and mental states connected with pituitary disorder, the psychoses of hyperthyroidism, and the so-called change of life manifestations in both male and female should have received more attention. In my opinion, all these changes could be made very easily in a second edition.

On the whole, the book is well documented, exceedingly practical, and excellently arranged. The authors are to be congratulated.

BEVERLEY R. TUCKER.

Quarterly Review of Surgery, published by Washington Institute of Medicine, Washington, D. C.

Surgical publications have become so numerous and published articles cover such diverse subjects that it is increasingly difficult to keep abreast of surgical progress. With the great increase in duties which most surgeons have had to assume during the present emergency, it is impossible for many of them to read completely even the most important papers. The appearance in November 1943 of the first volume of the Quarterly Review of Surgery is, therefore, especially appropriate. This Review is published under the auspices of the Washington Institute of Medicine and the journals in the Surgeon General's Library (Army Medical Library) are therefore readily available for abstract purposes. Carefully made abstracts give an excellent idea of the contents of a paper and thereby make it possible for one to have a general knowledge of the developments in his field and to select more wisely those articles to be thoroughly studied. To accomplish these purposes, the editors of the reviewing journal must select with care those articles to be abstracted and must present the core of each article in the abstract. These requirements have been met in the first number of the Quarterly Review of Surgery, so it is believed that it will serve a useful purpose.

I. A. BIGGER, M.D.

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Official Publication of the Medical Society of Virginia

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No. 2

Fingerprinting Medical Diplomas

FROM time to time the public is imposed upon by some charlatan passing himself off as a graduate in medicine. We have recently come into possession of a manuscript book by the late Robert P. Harris entitled *Untruthfulness*. Most of it concerns the rival claims of three Louisiana doctors, for the credit of performing an early Cesa-rean operation. A part is about a doctor who reported the "First Symphysiotomy in America". This doctor who lived in an Alabama town of 75 inhabitants, was an A.M., M.D., Ph.D. and LL.D. He was a member of the Edinburg Gynecological Society, the Dublin Obstetrical Society, The Association for the Advancement of Science, a Fellow of the Society of Arts, London; and Honorary Fellow of the Society of Zoological Research, Berlin. Upon investigation the operation was found to be entirely imaginary; the patient could not be found and the place in which the operation was said to have been performed did not exist. The "doctor" claimed to have graduated from the University of Georgia. He had matriculated there but left under a cloud. He exhibited a diploma from Western Reserve which was bogus. His local medical society denounced him as an imposter and fraud, forthwith expelling him.

The recent case in California of J. H. Phillips is a familiar one. Phillips posed successfully as a surgeon in CCC Camps and in a California hospital. He was exposed accidentally when he failed to conform to the peculiar California law about signing prescriptions. Upon investigation it was found that he had a long history of crimes and prison sentences. He had secured a diploma from the University of Tennessee School of Medicine by posing as a former graduate of the school by the name of Dr. James H. Phillips.

Dr. Maurice H. Rees, Dean of the University of Colorado School of Medicine (*Journal of the Association of American Medical Colleges*, May 1943) says that such

mistakes can be easily avoided by the simple procedure of having the graduate put his finger prints on the back of his diploma when it is given to him. State licensing bodies and the National Board of Medical Examiners should also adopt the same policy. All certificates of special achievement which might be stolen and used illegally or to the embarrassment of the owner should carry finger print identification.

According to Rees the introduction of the finger print identification system to this country was largely due to Mark Twain. In his "Life on the Mississippi" and "Pudd'nhead Wilson" he made the statement that no two finger prints were alike and that finger prints did not change from birth to death. These statements have been proven to be absolutely correct. Unfortunately until recently, finger printing has been confined to criminals so that the procedure carries with it the odor of disrepute. Now that it has been adopted by the Army and the Navy this method of identification should become respectable. It would seem that now is a good time for the medical profession to adopt it. Every important document should carry the plain impressions of three fingers of the owner's right hand as a means of identification.

The Children's Bureau

THE medical profession has made tremendous strides in the past forty years. In 1900 the average duration of life was forty years, in 1942 it was sixty-three years. In the beginning of the century the doctor was sent for only when there was dire need or severe pain. A goodly percentage of the population did not believe in doctors and had no use for them under any conditions. Now the doctor is sent for when the least thing is the matter and a fair percentage of people employ him to keep them well. Medical service is now classed as a necessity along with food and shelter, and the medical profession is criticized because its services are not more evenly distributed through the country.

What is true for medicine in general is true to even a greater extent for obstetrics. Forty years ago prenatal care was unheard of and delivery care was largely in the hands of midwives. Sometimes when there were complications a doctor was called in to assist. Many cities that provided hospital care for the needy sick, refused to provide for a woman having a baby even if it were a complicated case. To get the city ambulance to go for a patient suffering from placenta previa, for instance, one had to resort to subterfuge.

In 1912 when the Children's Bureau was started, only a small part of the country was in the registration area. Maternal and infant deaths were numerous, but no accurate figures are available. Even in 1915 there were only 10 states in the registration area. In 1918 when the still birth rate became available the registration area had grown so that mortality rates are representative. The registration area embraced the New England States, Maryland, Indiana, Kansas, Kentucky, North Carolina, Ohio, Utah, Virginia, Washington, Wisconsin, Minnesota, Michigan, New York, Pennsylvania and the District of Columbia. In this area there were 9.2 maternal deaths, 100.9 infant deaths, and 40.6 still births per 1,000 live births.

The Children's Bureau undertook to remedy this disgraceful situation. It began a campaign of education—education of the midwife and, more important, education of the public. It set up minimum standards for prenatal and delivery care. By 1941 the maternal mortality had fallen to 3.2 per 1,000 live births and there were only 45.3 infant deaths and 29.9 still births per 1,000 live births. The results were not surprising, considering the skill and thoroughness of the educational campaign and the wholehearted cooperation of the medical profession. The astounding thing is the

changed attitude of the public and the politicians. Maternal and infant care is now considered a necessity.

In the early part of the war the work of the Children's Bureau took on a new turn as result of an emergency that developed around Ft. Lewis in the State of Washington. The wives of the enlisted personnel overtaxed the local obstetric and pediatric facilities. The Children's Bureau stepped in to meet the deficiency. At first there was no especial appropriation for this work, but, as similar emergencies arose elsewhere, more and more money was put in the hands of the Bureau and, as the emergency appropriations increased, Congress made certain rules about the expenditure of this money. Among them was the provisor to the effect that no part of the appropriation could be used if there were any discrimination against any person who is qualified to practice under a State law. These persons, by an act of Congress, no longer have to come up to the minimum standards that the Children's Bureau has worked so hard to get established.

This embarkation into the field of practice of medicine, coming as it does at the time of the introduction of the Wagner-Murray bill for the Federal control of all medicine and accompanied as it was by a lowering of the standards of obstetric practice, was a distinct shock to the medical profession. The director of the Children's Bureau says that the EMIC program is only for the emergency. We had the privilege of attending a conference with the Children's Bureau and we believe the director is sincere in her statement. However, at the same conference a representative of the American Legion very frankly stated that the Legion intended to make Congress extend the EMIC plan so as to include all medical and surgical care for enlisted men's families. It is doubtful, therefore, if the Children's Bureau will have any control over the extent to which the practice of medicine will be carried by the Federal Government. Furthermore, in order to get its program adopted by the various States, the Children's Bureau has brought to bear considerable pressure of public opinion; sometimes it seems unfairly. When for any reason, a medical group did not see eye to eye with the Children's Bureau, it was accused by the newspapers of being unpatriotic.

It is unfortunate that politicians have put the Children's Bureau, which has done and is doing such a magnificent job, in a false position.

Soviet Medicine

THE first number of the American Review of Soviet Medicine is a timely reminder of an unique medical society that originated in the Spring of 1943 in New York City for the purpose of promoting cooperation between the members of the medical and allied professions of the United States and the Union of Soviet Socialist Republics. Outside of the epoch-making work of Pavlov, Straganoff, Mechnikov, and perhaps the Surgeons Pirogov and Bodkin, little is known about Russian medicine in this country. We know that Catherine II imported Thomas Dimsdale from London to "inoculate for the Smallpox" both herself and her children, but our interest in the episode is chiefly on account of the recordbreaking fee, viz. \$50,000 with an additional \$10,000 for traveling expenses and a pension of \$2,500 for life. In spite of, or possibly because of, this occurrence, we get a notion that Russian medicine has been backward in development. Few of us know that Mochoukovsky championed the theory that typhus was transmitted by bloodsucking insects as far back as 1876, or that Rosenblum discovered the malaria treatment for dementia paralytica in 1879. To avoid persecution he reported that his patients had been accidentally infected. In the Crimean War when Florence Nightingale was having such difficulties organizing an English nursing service, Pirogov and the Grand Duchess Helena Pavlovna introduced Russian women nurses to the battlefield.

In spite of Sigerist's "Socialized Medicine in the Soviet Union", Gantt's "Russian Medicine" and Percy Dawson's "Soviet Samples", little is known of Soviet medicine. The general impression is that Soviet medicine has centered on the hygienic care of infants and children. They have carried on the greatest mass experiment in abortions in the history of the world, and when it failed, had the courage to stop it. There have been rumors of experiments with cadaver's blood. This about sums up the average American doctor's knowledge of Soviet medicine.

In the foreword of the American Review of Soviet Medicine Dr. Walter B. Cannon, the president of the American Soviet Medical Society, says that the medical profession is the world's greatest fraternity and that medical research recognizes no artificial barriers between nations. There is, however, a natural barrier to the free exchange of medical knowledge, and that is, a marked difference in language. As a remedy for this defect the American Review of Soviet Medicine is being issued. It will put within reach of the American reader translations, reviews, and abstracts of Soviet medical books and periodicals. The present number most appropriately has to do with war surgery. The editor is Dr. Henry E. Sigerist which is a guarantee of the success of the undertaking. The format is quite attractive with just a touch of Soviet typography. Dr. Cannon's picture, for instance, which forms the frontispiece, looks as if it might have been done in Moscow. The second number will feature for the first time anywhere in English the work of A. A. Bogomolets and his school on the life-prolonging anti-reticular cytotoxic serum (ACS).

Societies

Tazewell County Medical Society.

At the meeting of this Society in North Tazewell, on November 18, 1943, with the President, Dr. J. W. Witten, presiding, the following committee report was approved by the Society:

The United States Government has recently put into operation through most of the state health departments in cooperation with the Children's Bureau of the Department of Labor a plan of governmental financing of maternity and infant medical care for service men's families. It is already backed by a congressional appropriation of \$4,400,000 and the present Congress seems likely to appropriate any amount of funds necessary to insure the success of the plan. Besides qualified physicians, the state health agencies are permitted to allow osteopaths, chiropractors, midwives and other cultists to participate in this service. Apparently the various state health departments and perhaps some officers of our state medical societies have agreed to the stipulated fees for this professional service with but little consultation with obstetricians, pediatricians and county medical societies. The plan has evidently been pro-

mulgated chiefly through governmental agencies rather than through the channels of medical societies and for this and the above reasons it is somewhat obnoxious to the average medical practitioner.

However, the plan does allow the service man's wife free choice of her physician and, of course, she is free to decline any financial aid from the government. Furthermore, every physician is anxious to assist in any way possible our boys at the front and it is only with the idea of eliminating this possible source of his worry over necessary funds for the care of his wife and baby at home that the members of the Tazewell County Medical Society approve this plan of medical care for service men's families for the duration of the present war.

Dr. W. R. Strader of Richlands discussed in detail the problem in diagnosing and treating pituitary cachexia. He emphasized the fact that many cases of this disease are unrecognized and that treatment of the condition will probably be more effectual with the development or isolation of the proper glandular extracts or substances in the near future.

J. A. ROBINSON, *Secretary*.

Albemarle County Medical Society.

At a meeting of this Society on January 6th, several doctors were admitted to membership and the following officers elected for 1944: President, Dr. W. W. Waddell, Jr.; vice-president, Dr. T. J. Williams; and secretary, Dr. W. Roy Mason, all of the University of Virginia.

The Wise County Medical Society

Met at Norton on December 17th, with Dr. S. G. Pelzer, Lynch, Ky., a vice-president, presiding. There were eighteen members present and the meeting was opened with a dinner. Dr. C. B. Bowyer, president of the Medical Society of Virginia, discussed the Wagner Bill and its effect on doctors. Comments were also made on the chiropractic bill also before the state legislature. The members voted to favor the passage of the bill before the legislature to change the present coroner system to a medical examiner system for Virginia. Dr. G. B. Setzler, Pennington Gap, gave a report of the State Society meeting in Roanoke.

Dr. R. L. Phipps, Clintwood, was the guest speaker, his subject being The Acute Abdomen—Diagnosis. Dr. G. T. Foust, Norton, discussed the obstetrical side of this question; Dr. C. L. Harshbarger, Norton, and Dr. Setzler spoke on the surgical diagnosis and treatment.

Dr. J. J. Porter, Norton, is president of this Society and Dr. W. B. Barton, Stonega, secretary-treasurer.

The Medical Society of Northern Virginia,

At its annual meeting on December the 14th, elected the following as officers for 1944: President,

Dr. C. O. Dearmont, White Post; vice-president, Dr. B. B. Dutton, Winchester; and secretary-treasurer, Dr. J. E. Harris (re-elected), also of Winchester. Delegates to the House of Delegates of the State Society were elected for a term of two years.

At this meeting, several interesting case reports were given by members, and the following papers were presented: Transverse Incision in Laparotomy by Dr. H. I. Pifer of Winchester; Classification and Treatment of Hypertension by Dr. J. Edwin Wood; and Intestinal Obstruction by Dr. E. P. Lehman. The last two were invited guests and are members of the teaching faculty at the University of Virginia.

Patrick-Henry Medical Society.

At the regular quarterly meeting of this Society on January the 14th, the following officers were elected for this year: President, Dr. R. H. Walker, Martinsville; vice-president, Dr. J. T. Shelburne, Critz; and secretary-treasurer, Dr. T. Henry Dickerson, Martinsville. At the business session, also, Miss Louwella Honaker, Red Cross nurse for Henry County, presented a report of her activities for 1943. The guest speaker at this meeting was Dr. Robert L. McMillan, assistant professor of medicine at the Bowman Gray School of Medicine in Winston-Salem, N. C., who presented an illustrated paper on rheumatic heart disease.

The Arlington County Medical Society,

At its annual meeting held in December, elected the following as officers for 1944: President, Dr. J. E. Payne; vice-president, Dr. Eugenia E. Murphy; and secretary-treasurer, Dr. Jerome A. Cope.

News

The Tri-State Medical Association of the Carolinas and Virginia,

After omitting their 1943 meeting, voted to resume meetings this year, this to make the forty-fourth meeting in forty-five years. Charlotte was selected as the place, with headquarters at Hotel Charlotte. Dates are February 28 and 29. Dr. Frank S. Johns of Richmond is president and Dr. J. M. Northington of Charlotte secretary.

Owing to the crowded conditions on trains, it is

suggested that those who plan to attend make train as well as hotel reservations at once.

The Pronunciation.

The hall was packed for the RSM penicillin meeting. It was said to be the biggest crowd seen there since Sir Almroth Wright's vaccine meeting in 1909. "I thought the war was over," said one of the porters, "seeing so many doctors with a free afternoon." Incidentally, though the BBC and Dorland's Dictionary put the accent on the second syllable

ble, I noticed that Professor Fleming, who coined the word, called it penny-sil-in, with the accent of the *sil*.—(From the *London Lancet*, Nov. 20, 1943, p. 648.)

News from the University of Virginia, Department of Medicine.

On December 16th and 17th, Dr. Vincent W. Archer, Professor of Roentgenology, gave two talks on Gastro-intestinal diagnosis, was leader of an x-ray conference, and was one of a panel of four in a round-table discussion on Diseases of the Chest at a War-time Graduate Medical Meeting, LaGarde Army Hospital and the Naval Hospital, New Orleans, Louisiana.

Dr. Fletcher D. Woodward attended a meeting of the Eastern Section of the American Laryngological, Rhinological and Otological Society in New York on Friday, January 14th, and a meeting of the council of the same society on Saturday, January 15th. As Vice-President of the American Broncho-Esophagological Association, he attended a council meeting of that organization on Sunday, January 16th.

The Personnel of the Eighth Evacuation Hospital, sponsored by the University of Virginia, now on duty in southern Italy, recently presented to the Medical School a collection of 75 replicas of surgical instruments discovered in the ruins of Pompeii and Herculaneum. The originals from which these reproductions were made were on exhibition in the National Museum of Naples. The reproductions were made by Cavalier Guglielmo Gallo, 27 Piazza Dante, Naples. The replicas were made by hand from the metal originally used, usually bronze. They will be put on display in an appropriate museum case in the Medical Library.

Medical College of Virginia News.

Dr. C. C. Coleman, professor of neurosurgery, attended the annual meeting of the American Academy of Orthopedic Surgeons in Chicago, January 23, giving a paper on *Surgery of the Peripheral Nerves*.

Major Joseph M. Dixon, an alumnus of the college, has been appointed Professor of Military Science and Tactics. Major Dixon relieves Colonel Paul L. Freeman, who is being retired, as commandant of the 3313th Unit of the A.S.T. program under the army at the college.

Dr. Erling S. Hegre has been appointed assistant professor of anatomy effective January 1. Dr. Hegre received his bachelor of arts degree from the Luther College of Montana State University, his master's from the same university, and his Ph.D., from the University of Minnesota medical school.

Dr. Helen J. Ramsey has been appointed instructor in pharmacology. She received her bachelor's and master's degrees in science from Purdue University and her Ph.D. from Duke.

A grant in the amount of \$1,000.00 has been made by Dr. C. C. Haskell for research in biochemistry. The Office of Scientific Production and Research of the Federal government has made an additional grant of \$4,000.00 for continuation of the research work in shock and burns. A gift of \$10,000.00 has been received for the North Campus project.

Mr. Samuel Bemiss has been appointed to the college Board of Visitors to fill the vacancy caused by the death of Mr. Julien Hill.

President W. T. Sanger visited the research laboratories of R.C.A., at Princeton, those of General Electric Company at Schenectady, and also visited Saratoga Springs, January 21-23.

Dr. R. J. Wilkinson of Huntington, West Virginia, was a recent college visitor.

The Department of Psychiatry of the College has recently been approved for residencies by the American Board of Psychiatry and Neurology. This is an important advance, since graduates in medicine who plan to make psychiatry their specialty always wish to get their hospital experience on a service recognized nationally. Dr. Finley Gayle, professor of psychiatry at the College, was largely responsible for securing this arrangement.

1944 Red Cross War Fund.

When bombs fall there is no time to send help half way around the world. When a badly wounded fighting man needs a transfusion, it is too late to begin looking for a blood donor or find a nurse to care for him. When a lonely soldier learns of trouble at home, he needs help—immediately.

The American Red Cross provides that help wherever and whenever the need arises. A continuous procession of blood donors must be maintained, nurses must be recruited for the Army and Navy,

trained Red Cross workers and supplies must be sent to camps, hospitals and foreign theaters of operation the world over.

When a train crash leaves scores injured, when flood engulfs a town, when epidemic strikes, delay may cost lives. Red Cross disaster relief and medical supplies, held in readiness for such emergencies, plus trained workers to rescue and assist victims and help in their rehabilitation, will prevent delay and thus save many lives.

To fulfill its many obligations to the armed forces and our people, the American Red Cross needs your help. During 1944 it must supply some 5,000,000 blood donations. Each month 2,500 nurses must be recruited for the Army and Navy. Red Cross field directors and other trained personnel must be stationed at military and naval posts and hospitals to help our fighting men and their families when personal trouble brews, a task in which the Red Cross chapter on the home front ably does its share.

At home the Red Cross must continue to maintain a state of alert. Disasters must be met as they occur. Nurses' aides and first aiders must be trained and other educational projects continued. Food parcels for distribution to prisoners of war must be packed, surgical dressings made and the thousand and one details of administering a far-flung, busy organization must be attended.

All activities of the American Red Cross are financed by voluntary gifts and contributions. During March, designated by President Roosevelt as Red Cross Month, the American Red Cross must raise its 1944 War Fund of unprecedented size to meet unprecedented needs. Your contribution will assure maintenance of all Red Cross services and thus indirectly help save many a life. Let's give!

Raiford Hospital to be Enlarged.

A new three story addition to the Raiford Memorial Hospital, Franklin, has been approved and a grant of \$114,000 from the Federal Works Agency has been secured. This amount, along with \$50,000 of local contribution, will be used to build and equip the new wing which will provide 26 additional beds. A one-story clinical building for outpatient treatment will also be constructed and the present hospital building will be completely remodeled. This will make possible a modern surgical and obstetrical suite, consisting of two operating and two delivery rooms.

The staff of the hospital, which was founded in 1929 by Dr. R. L. Raiford, consists of Dr. R. L. Raiford, Dr. Morgan B. Raiford, Dr. Kurt Hirsch, and Dr. Joseph D. Hough.

Reported Missing in Service.

Capt. Lewis T. Stoneburner, III, Richmond, has been reported as missing in action in the African theater of war since October 10. He was connected with General Hospital No. 45 which was formed in Richmond. Details as to his disappearance have not been given out. He graduated from the Medical College of Virginia in 1937, following which he served an eighteen months' internship in the Harvard medical service at Boston City Hospital. For the next six months he was a special student under Dr. George R. Minot, and was then appointed Harvard resident physician at Boston City Hospital and a research fellow at the Thorndike Memorial Laboratory. He returned to Richmond in 1940 and was associated in practice with his father until time of entering the Service. In the early Fall, he was selected as chief consultant in medicine for the North African theater of operations to visit various hospital units and report on conditions to his commanding officer. It is thought he was on one of these trips and his plane was shot down.

Urologists to Meet in Roanoke.

The Mid-Atlantic Section of the American Urological Association is to meet at Hotel Roanoke, Roanoke, March the 10th and 11th, under the presidency of Dr. A. I. Dodson of Richmond. The program has not yet been completed but an excellent one is expected. Dr. Theodore R. Fetter of Philadelphia is secretary.

Major Charles R. Robins, Jr., M.C.,

Who was recently reported as ill with meningitis, is now much improved and on the road to recovery, according to reports received by his family. He is connected with General Hospital No. 45, which has been stationed in North Africa.

Monument Presented to Lynchburg by Dr. Morton.

Dr. Rosalie Slaughter Morton of Winter Park, Fla., in the Fall presented a three figure statue personifying "Vision", "Fortitude" and "Kindliness" to "The Sons and Daughters of Our City of the Hills", Lynchburg. Dr. Morton, a native of Lynchburg, supplemented her excellent medical and

surgical work in this country with service abroad and was decorated by the French and Serbian governments and the State of New York for distinguished patriotic service.

American College of Surgeons to Hold War Sessions.

Twenty-two cities distributed throughout the United States and Canada have been selected by the American College of Surgeons as headquarters for one-day War Sessions to be held in March and April, 1944. The meetings will be open to the profession at large, including medical officers of the Army and the Navy, residents, interns, medical students, and executive personnel in hospitals.

Those who plan to attend the War Sessions may select the meeting which in place or time is most convenient. The group including Maryland, District of Columbia and Virginia will have its session in Baltimore on March the 24th.

Each meeting will open at 8:30 A. M. with the showing of official U. S. Army and U. S. Navy films on medical and surgical subjects, such as evacuation of the wounded, fractures, bomb blast, burns, and treatment of wounds.

After a full day, the concluding session will be a dinner meeting and open forum with all participants in the day's program as the panel of experts to lead discussions.

Admitted to Fellowship in the American College of Surgeons.

The following is a list of initiates from Virginia accepted into fellowship in the American College of Surgeons in 1943:

Dr. Harvey G. Bland	Newport News
Dr. Josiah E. Haynsworth, Jr.	Lynchburg
Dr. Robert W. McCullough	University
Dr. Francis H. McGovern	Danville
Dr. Bernard D. Packer	Alexandria
Dr. Chester L. Riley	Winchester
Dr. James W. Tankard	Newport News
Dr. Samuel A. Vest, Jr.	Charlottesville

Urology Award.

The American Urological Association offers an annual award not to exceed \$500 for an essay (or essays) on the result of some specific clinical or laboratory research in Urology. The amount of the prize is based on the merits of the work presented, and if the Committee on Scientific Research deem none of the offerings worthy, no award will be made.

Competitors shall be limited to residents in urology in recognized hospitals and to urologists who have been in such specific practice for not more than five years. All interested should write the Secretary, for full particulars.

The selected essay (or essays) will appear on the program of the forthcoming meeting of the American Urological Association, June 19-June 22, 1944, Hotel Jefferson, St. Louis, Missouri.

Essays must be in the hands of the Secretary, Dr. Thomas D. Moore, 899 Madison Avenue, Memphis, Tennessee, on or before March 15, 1944.

Dr. Harry W. Hollingsworth,

After sometime at Leona Mines, has taken over the former office of Dr. John R. Saunders in Madison Heights, and is engaged in the general practice of medicine there and in Amherst County. For the present he and his family are making their home in Lynchburg.

Chicago Number, Mississippi Valley Medical Journal.

The January issue of the Mississippi Valley Medical Journal is called the "Chicago Number". A feature of the ninth annual meeting of the Mississippi Valley Medical Society held at Quincy, Illinois, last September was an All-Chicago program arranged by Dr. W. O. Thompson, Associate Professor of Medicine, University of Illinois College of Medicine, and conducted by well-known clinician-teachers from that city. The January number contains some of the contributions from the Chicago group. The remaining papers from this group will appear in the April issue. This will be called the "War Medicine Number" and will feature a symposium by this title held at the Quincy meeting last fall.

Dr. J. Shelton Horsley,

Richmond, who was recently appointed a member of the National Advisory Cancer Council, attended a meeting of the Council in Washington on Saturday, January 8th. The Council is appointed by Surgeon General Parran and consists of seven members, with Dr. Ludwig Hektoen, of Chicago, as Executive Director. The other members are: Dr. Arthur H. Compton, of the University of Chicago, a Nobel Prize winner; Dr. A. Baird Hastings, of Harvard University Medical School; Dr. James B. Murphy, of the Rockefeller Institute for Medical

Research; Dr. Sherwood Moore, of Washington University School of Medicine in St. Louis; and Dr. George M. Smith, of Yale Medical School.

The Council is associated with the research work and granting of scholarships of the National Cancer Institute and meets at Bethesda, Maryland, at intervals of a few months.

Dr. Robert V. Funsten,

Of the University of Virginia, had the misfortune to lose his country home, Padoboja Farm, by fire, on January the 11th. Its contents were also destroyed but, by prompt action of firemen and neighbors, the flames were kept from spreading to the barn and other out-buildings.

Dr. Edward A. Delarue, Jr.,

Of Richmond, who for more than a year and a half has been on active duty with the Medical Corps, Army of the United States, was recently elected a Fellow of the American College of Physicians.

Dr. Sheldon D. Carey,

Until recently of Floyd, is now at 209 East Main Street, Salem, where he is occupying the office of Dr. Russell B. Williams, who is serving a residency in surgery at the Presbyterian Hospital in Chicago.

The Sixth Annual Congress on Industrial Health,

Sponsored by the Council on Industrial Health of the American Medical Association, will be held Tuesday and Wednesday, February the 15th and 16th, at the Palmer House in Chicago. Physicians and others interested in industrial health are cordially invited. There is no registration fee.

Dr. S. H. Macht,

Who practiced for sometime in Crewe but has for the past six months been taking special work in radiology at Jefferson Hospital, Philadelphia, has been appointed an assistant in that department.

Dr. Linwood D. Keyser,

Roanoke, was the guest speaker before the mid-winter meeting of the New York Urological Society held at the Yale Club in New York City on January 13th. His subject was "Studies in Urinary Calculosis," which covered experimental and clinical work dealing with urinary stone during the last twenty-five years.

The American Gynecological Society,

At a recent meeting of its Council, voted to have

a meeting in 1944. It was further decided to hold the meeting in Chicago, on June 19, 20, and 21, immediately following the meeting of the American Medical Association.

Married.

Dr. Charles Porter Blunt, III, Lynchburg, and Miss Mary Elizabeth Prillaman, Martinsville, December 28th. Dr. Blunt graduated from the Medical College of Virginia in March, 1943.

Lt. (jg) Joseph Shelton Bower, MC., Salem, and Miss Merietta Bagley McGhee, Altavista, December 18th. Dr. Bower graduated in medicine from the University of Virginia in December, 1943, and is serving an internship at the Navy Hospital in Bethesda, Md.

Dr. Edgar Newman Weaver, Grosse Pointe Park, Mich., and Miss Evelyn Dabney Richards, Roanoke, December 20th. Dr. Weaver is a member of the last graduating class of the Department of Medicine, University of Virginia, and is serving his internship at the University Hospital.

Lt. Philip Laub Schultz, MC., USA., and Dr. Elizabeth Harmon Hill, both of Charlottesville, June 6th. Dr. Schultz received his medical degree from the University of Virginia in 1941 and Dr. Hill in December, 1943. Dr. Schultz is stationed at Camp Breckinridge, Ky., and his wife is serving an internship at the New York Post-Graduate Hospital.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

- Ackerman, Lloyd—Health and hygiene. 1943.
- Angyal, Andras—Foundations for a science of personality. 1941.
- Arthur, Grace—A point scale of performance tests. v. 1. 1943.
- Bausch and Lomb—The human eye in anatomical transparencies.
- Billings, Edward G.—Handbook of elementary psychology. 1939.
- Bingham, Walter V.—Aptitudes and aptitude testing. 1937.
- Bower, A. G., and Pilant, E. B.—Communicable diseases for nurses. New 5th ed.
- Bull, Henry B.—Physical biochemistry.
- Gamble, J. L.—Chemical anatomy of extra-cellular fluid.
- Glueck, Sheldon and Eleanor—Criminal careers in retrospect.

Glueck, Sheldon and Eleanor—Juvenile delinquents grown up.

Glueck, Sheldon and Eleanor—Later criminal careers.

Graubard, M.—Man's food: Its rhyme or reason.

Hasenjaeger, Ella—Asepsis in communicable disease nursing. 1940.

Parker, Douglas B.—Synopsis of traumatic injuries of the face and jaws. 1942.

Stewart, Isabel—The education of nurses.

Terry, Gladys C.—Fever and psychoses.

Thorex, Max—A surgeon's world. 1943.

Wellmann, Frederick C.—Life is too short.

Wolf, Anna W. M.—Our children face war. 1942.

Wood and LaWall—U. S. Dispensatory. 23rd ed.

National League of Nursing Education—A curriculum guide for school of nursing.

Rogers, C. H.—A textbook of pharmaceutical chemistry. 3rd ed.

Schaub and Foley—Methods for diagnostic bacteriology. 2nd ed.

For Sale—

A General Electric x-ray machine, guaranteed in good order. Address Dr. J. W. D. Haynes, Mathews, Va. (*Adv.*)

Wanted—

Position as clinical laboratory technician. References furnished. Address "Technician", care this journal, 1200 East Clay Street, Richmond 19, Va. (*Adv.*)

Obituaries

Resolutions on Death of Dr. H. D. Howe.

WHEREAS, Dr. Harry D. Howe was outstanding in stature among his medical colleagues on the Lower Virginia Peninsula, a leading member of the Medical Staff of Dixie Hospital, as well as Elizabeth Buxton and the Veterans' Hospital, where his surgical skill and judgment were unexcelled, and a fellow of The American College of Surgeons, and

WHEREAS, Dr. Howe was unusually prominent in civic and community affairs, a member of the Selective Service Board, the Elizabeth City County Board of Health, Trustee of Hampton Institute, Trustee of Dixie Hospital, Vice-President of the Citizens' National Bank, member of the Rotary Club, and other organizations, in each of which he took an active and progressive and unselfish interest, and

WHEREAS, Dr. Howe was a man of great personal

charm and wide friendship, a devoted husband, father, and grandfather, a world traveler of note and a raconteur of distinction,

BE IT THEREFORE RESOLVED That his fellow members of the Medical Staff of Dixie Hospital and the Elizabeth City County Medical Society hereby express to his family and to their community their sense of personal loss and bereavement in his sudden death Monday, December 27, 1943.

Committee:

ROBERT H. WRIGHT, JR., M.D.

GEORGE B. D. STEPHENS, M.D.

PAUL J. PARKER, M.D.

At a meeting of the Riverside Hospital Staff, held December 29, 1943, the following resolutions were unanimously adopted:

WHEREAS, in the death of Dr. Harry D. Howe, of Hampton, Virginia, this body has lost one of its most beloved friends and advisors;

THEREFORE, BE IT RESOLVED that in his passing we feel, not only the medical profession of Virginia, and especially the Virginia Peninsula, will miss him, but we, ourselves, have sustained a great loss.

Dr. Howe has been interested not only in the medical profession of which he has been a leader all of his professional life, but he was keenly interested in every activity for the betterment of this whole community. He gave of himself unreservedly in every activity of life, especially professionally, socially, and spiritually.

The number of boards and associations of which he was a member are legion. He served as a First Lieutenant in the Medical Corps of the United States Army in the first World War. He was a member of the local Selective Service Board and a member of the local Procurement and Assignment Board at the time of his death.

BE IT RESOLVED that the Riverside Hospital Staff offers to his widow and family their sincere and deep sympathy in their irreplaceable loss.

BE IT FURTHER RESOLVED that these resolutions be spread on the Minutes of this body and a copy be sent to the family and the Medical Society of Virginia.

O. T. AMORY, M.D., *Chairman*

W. O. POINDEXTER, M.D.

W. R. PAYNE, M.D.

Dr. Coleman B. Ransone,

City Health Commissioner of Roanoke for the past nineteen years, died suddenly December the 3rd, on his first visit to his office since he became ill last September. Death was due to thrombosis. He was a native of Mathews County and 56 years of age.

Dr. Ransone was a graduate in medicine from the Medical College of Virginia in 1915 and had served as health officer of Newport News before

accepting his appointment to a similar job in Roanoke. His wife and two sons survive him.

At the regular meeting of the Roanoke Academy of Medicine on December 7, 1943, the following resolution was adopted:

With deep regret the Roanoke Academy of Medicine learned of the departure of Dr. Coleman B. Ransone, who had faithfully served the city as Health Officer for many years.

The Roanoke Academy of Medicine wishes to extend their deep and sincere sympathy to his bereaved family and to express to them their sincere appreciation of Dr. Ransone as a doctor and a citizen.

It is resolved that a copy of this resolution be sent to his family, the local papers and the Medical Society of Virginia.

G. C. GOODWIN, M.D.
W. W. S. BUTLER, M.D.
B. P. SEWARD, M.D.
Committee.

Dr. William Byrdwill Peters,

Prominent surgeon of Appalachia, died January the 9th in a Baltimore hospital. He was born in Scott County sixty-one years ago and graduated from the Hospital Medical College of Louisville in 1907. The following year he located in Appalachia where he had since practiced except for the time he served in World War I, with the rank of captain. Dr. Peters was prominent in American Legion activities, being a charter member of his local post and having represented Virginia as national committeeman. He was founder of the Masonic hospital in Appalachia, a member of the Medical Society of Virginia, and, for the past year, had served as chief surgeon of the Holston Ordnance Works at Kingsport, Tenn. He was active in civic affairs and had been president of the local chamber of Commerce. He is survived by his wife and three sons.

Dr. John Pugh Smallwood,

Of Falls Church, who had practiced in Fairfax and Arlington Counties for the past thirty-five years, died on January the 4th. He was born in New Bern, N. C., in 1865 and, after attending the University

of Virginia for a short time, entered the University of Maryland, from which he graduated in medicine in 1885. For several years he served as a ship surgeon in making runs between New York and Rotterdam. He was a member of his local and State medical societies and of the American Medical Association. His widow survives him.

Dr. Oscar Ringold Quaintance,

Slate Mills, died January the 3rd, at the age of ninety-three years. He was perhaps the oldest physician in this State. Dr. Quaintance graduated in medicine from the University of Pennsylvania in the class of 1873 and had practiced in Rappahannock County, this State, since that time. He had been a member of the Medical Society of Virginia for forty years. He is survived by two sons, Dr. Rupert W. Quaintance of Lundale, W. Va., and Dr. Walter S. Quaintance of Slate Mills.

Dr. John S. Clark,

Ivanhoe, died of heart disease on September 25, 1943. He was sixty-five years of age and a graduate of the former University College of Medicine, Richmond, in 1900. Dr. Clark had been a member of the Medical Society of Virginia for forty years.

Dr. William Haynes Teeter,

Bristol, died October 1, 1943, at the age of sixty-two. He graduated from the St. Louis College of Physicians and Surgeons in 1899. Dr. Teeter had been a member of the Medical Society of Virginia for twelve years.

Dr. Virgil Hammer,

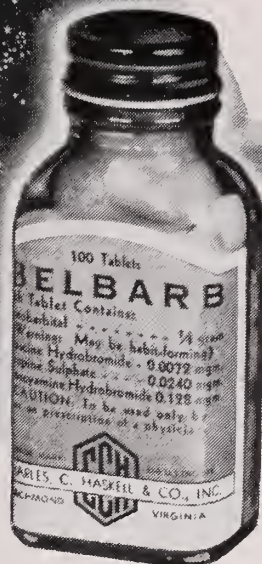
For forty-three years a practicing physician in Page County, died January the 18th, following a relapse from an attack of influenza. He was sixty-six years of age and a graduate of the Medical College of Virginia in the class of 1901. He was a former coroner and health officer of Page County for thirty years. He was also at one time a member of the Medical Society of Virginia. A daughter survives him. A brother is Dr. Loring Hammer of Luray.

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Rachitic changes were present as late as the fourteenth year, and the incidence was higher among children dying from acute disease than in those dying of chronic disease.

The authors conclude, "We doubt if slight degrees of rickets, such as we found in many of our children, interfere with health and development, but our studies as a whole afford reason to prolong administration of vitamin D to the age limit of our study, the fourteenth year, and especially indicate the necessity to suspect and to take the necessary measures to guard against rickets in sick children."

*R. H. Follis, D. Jackson, M. M. Eliot, and E. A. Park: Prevalence of rickets in children between two and fourteen years of age, *Am. J. Dis. Child.* 66:1-11, July 1943.

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Virginia

MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

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A PSYCHOSOMATIC PROBLEM

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Medical College of Virginia Issue

THAT this, the March, 1944, issue of the VIRGINIA MEDICAL MONTHLY, is a special Medical College of Virginia number is the result of the suggestion and invitation extended several months ago to the dean of the school of medicine by the editor of the MONTHLY. The content of the number will be found to have had its origin in work done by members of the faculty in the laboratories, clinics, and hospitals of the College and of Richmond, and to involve several fields within both preclinical and clinical medicine. The editorial committee includes Dr. E. C. L. Miller, directing librarian, and Dr. R. J. Main, professor of physiology. It is hoped that in this way readers of the MONTHLY may better know the College, its facilities, its services, and its staff members.

The Medical College of Virginia, now in its one hundred seventh session, has played an important role in medicine, not only in Virginia and in the South but also in the nation, with alumni in all but two of the forty-eight states and in several foreign countries. As in the War between the States, when the College continued to operate to train men for service as medical officers of the armies of the Confederacy, so has the College continued its activities in other periods of emergency. In the present conflict also, the facilities of the College are in use for the training of men, at present enrolled in the Army Specialized Training Program and in the Navy College Training Program, to serve as medical and dental officers in the military services.

Glorious as the past has been, however, and difficult as the present may be, it is to the future, immediate and ultimate, that we look and for which we plan, that the place occupied by the school of medicine of the Medical College of Virginia in American medical education and service may be ever more effective. Elsewhere in this number discussion is centered in plans for the enhancement of the role played by the College in this region particularly. Perhaps it is appropriate to emphasize here that any medical center, and certainly the Medical College of Virginia as the specific example, will be able to make its maximum contribution only when it has won wholehearted support. It is our purpose to dedicate our efforts to winning this type of support for the College, that it may develop into the medical center that is possible.

Finally, to the readers of the MONTHLY, we extend an invitation to think of the Medical College of Virginia as your medical center, interested in and providing services primarily for your communities, your patients, and you. In turn, we hope that we may have your interest, advice, and support, as your contribution to the effectiveness of our services. When you are in Richmond, we would consider it a privilege to have you visit the College in order that we may know you and that you may know us. It impresses us as important that we help each other in the solution of mutual problems. Your criticisms and suggestions will be welcomed.

J. P. GRAY, M.D., *Dean.*

THE MEDICAL COLLEGE OF VIRGINIA AND MEDICAL SERVICES IN VIRGINIA

J. P. GRAY, M.D.,

Dean, School of Medicine, Medical College of Virginia,
Richmond.

I

With more than one hundred years continuous operation behind her, the Medical College of Virginia, during recent years, has come into national prominence. Survival of the period of improvement and stabilization of medical education resulting from the Flexner report was an achievement in itself. Thereafter, consolidation of the University College of Medicine and the Medical College of Virginia in 1913 assured the continuation of medical education in Richmond. During recent years, the College has outgrown the modest facilities available and in use for more than a quarter century. New and extensive buildings and equipment have been provided through the efforts of the Board of Visitors and the President over a period of more than fifteen years to bring the College to its present enhanced position. Important as physical facilities are to the development of the medical center, however, other factors, too, are of no mean import in achieving the objectives set for the College. To some of these factors and problems your attention is invited.

II

From the beginning in 1838, much of the teaching has been done by physicians in practice. In nearly every instance, the only compensation received for participation in the instruction of students was the satisfaction of fulfilling the precept of the Hippocratic oath. The time has long since passed when this arrangement can meet the need for instruction in the preclinical sciences, so that now these subjects are taught by full-time personnel. In the clinical fields, however, the physician in practice interested in and possessing competency in teaching, is still relied upon in important respects. In most instances, as before, the compensation received is materially inadequate.

Even before the Pearl Harbor incident, these circumstances operated unfavorably on investigative activities with the result that only modest medical research programs could be carried out. The important need to be met by the College heretofore, as in war time, centered in the training of young men in

medicine to the end that they might enter upon practice to serve a population group at the earliest possible date. The teaching job, being of primary import, taxed the available staff to such an extent that there was, and is, too little time remaining for investigative work, even among full-time personnel.

III

The effects of war have been felt by the College before. Medical education has suffered and will continue to suffer for the duration of the present war, unavoidably, because of the need for trained young men in the military services. The military needs have been met by the procurement and assignment of younger members of the staffs of schools of medicine and hospitals, leaving these institutions with markedly decreased staffs to meet the needs of medical education under the accelerated program. At the Medical College of Virginia, one-third of the members of the faculty are on military leave so that we have fewer members of the teaching staff available to carry the load. Of at least equal and perhaps of even greater import to the future of medicine is the ultimate effect of the lowered premedical educational requirements affecting members of classes entering after January, 1945. For the duration of the war, the minimum requirement of three years of college work has been lowered to two years by mutual agreement of members of the Association of American Medical Colleges. The Army Specialized Training Program "qualifies" men for the study of medicine in a preprofessional educational experience of but five terms of twelve weeks each. The Navy College Training Program is somewhat more liberal in that it permits the experience to continue for five terms of sixteen weeks each, the equivalent of five semesters. Inasmuch as the subject requirements in the premedical sciences are maintained almost at the former level, there is marked limitation of opportunity for study in other areas believed to be important in the maturation of the candidate for the degree in medicine.

Round the calendar teaching and learning, as carried out under the accelerated program, offer the

saving of one full year. The plan had advocates even before it was adopted generally. The short-term experience of those schools in which the plan had been followed only as a war measure probably does not provide a basis of appraisal at this time, but it is the consensus of both teaching staff and student body, in this school at least, that the gain in time is offset by the loss incident to fatigue and all too short recovery periods in vacation time. There is no doubt that advantages are to be found in the plan or some modification of it, but compensating disadvantages do occur and must be dealt with if maximum efficiency is sought.

The benefits to the student enrolled in one of the training programs, however, are manifold. These are outlined, as they relate to the Army enrollee, in a subsequent article to appear in the MONTHLY. For the Navy enrollee, there is almost complete parallelism. These programs, carried on in schools providing instruction under contracts with the Army and the Navy, permit the military services to plan for and to meet their requirements for medical officers, and they permit the enrollee to study medicine without financial or other worries, particularly those worries incident to the war.

Also of import to schools of medicine is the loss of the privilege of selection of its students. It is believed that the school should have control of the selection of its candidates for the degree, and, similarly, that the student should have the opportunity of selecting the school in which he desires to study medicine. Under the two programs as they are set up, however, this relationship between school and student does not exist. Deans of schools of medicine participate in selection during the preprofessional training, but final selection is made by military officials.

These several effects of the war upon medical education can only result in less adequate opportunity for the student to prepare himself for the practice of medicine. "Excellence can be pushed" (Gregg) but unfortunately not all those given the opportunity to study medicine are of excellent caliber. The interest of the military officials, obviously, lies primarily in the supply of medical officers. Schools of medicine want to aid therein, of course, but their interest goes beyond that of preparing men for military medicine to preparation also for civilian practice when peace returns. The military officials have not indicated at any time an interest in chang-

ing the medical curriculum, however, and this is interpreted as evidence of interest in the maintenance of standards insofar as possible under existing circumstances. We look forward to the end of the present emergency when most of these conditions can be corrected, but for the present and immediate future, we must carry on in spite of difficulties. Most schools of medicine have these same problems to solve and in some instances their handicaps are even greater than ours.

IV

These, then, are some of the problems confronting the Medical College of Virginia. Their solution, important to medicine and to medical education in Virginia and in the South, lies with the College, specifically with the Board of Visitors, the administration, the staff, the students, the alumni, and interested friends. More important than the ultimate details of any plan are the fundamental principles upon which the details are based. In the present instance, pointed questions might be asked:

For what purpose does the College exist?

How can that purpose be fulfilled?

What needs exist in Virginia and in the South which might be met, in part at least, by the Medical College of Virginia?

The fundamental purpose for which the College exists lies in the training of men and women in the health services, including medicine, dentistry, pharmacy, and nursing. With particular respect to medicine, the purpose involves the training of men and women for the practice of medicine, such training to be on the broad base which permits the graduate to go into general practice after the hospital experience or to secure additional graduate and hospital training for specialized practice. Even in the two state-supported schools of medicine in Virginia, there are too few men and women in training to meet the need for physicians in Virginia communities, a need that antedated the present war by many years.

The training of men and women for service as physicians is the most expensive type of education. Minimum facilities required include buildings constructed and equipped for use as laboratories, hospital, and outpatient clinic. Adequate trained teaching and ancillary staffs are essential for satisfactory operation. Equipment and supplies needed are both extensive and expensive. Tuition and other fees cover but a fraction of the actual cost. Research must be an inherent activity of the school and hos-

pital if there is to be a medical center worthy of the name. These objectives may be achieved only if there are certain fundamental prerequisites, including: adequate financial support, appropriate physical facilities, competent personnel, group planning, an insatiable desire for knowledge on the part of each member of the team, *esprit de corps* placing medical center above self or group, teamwork, loyalty, and inspiring leadership. Money is an important factor in the plan but it is emphasized that money is not the only important item; certainly, it is not the most important resource. Attitudes are believed to be the most important single factor in the group listed. At the same time, the attitude is the most sensitive index of effectiveness and the least tangible factor operative to determine effectiveness. Certainly, disloyalty, selfishness, pettiness, and arrogance can bring chaos into an otherwise successful, happy, and efficient team, whether it be in the operating room, research laboratory, clinic or classroom.

Medical needs in Virginia, in most respects, do not differ widely from those in other states. While other states of the Union have these same problems to a greater or less degree, there is evidence to support the premise that the economic problems of the Southern States contribute to the more acute problems of medical and hospital care in those states.

V

At the annual meeting of the Seaboard Medical Association of Virginia and North Carolina in Richmond, on November 30, 1943, the Honorable Colgate W. Darden, Governor of Virginia, cited the possibility of federalized medicine unless there were tangible demonstration that the states could and would solve the problem. Governor Darden asked the Association to take an active part in the planning of suitable programs and stated that he would welcome assistance. A committee was authorized and appointed to work with the Governors of Virginia and North Carolina to attempt the solution of the problem in these two states.

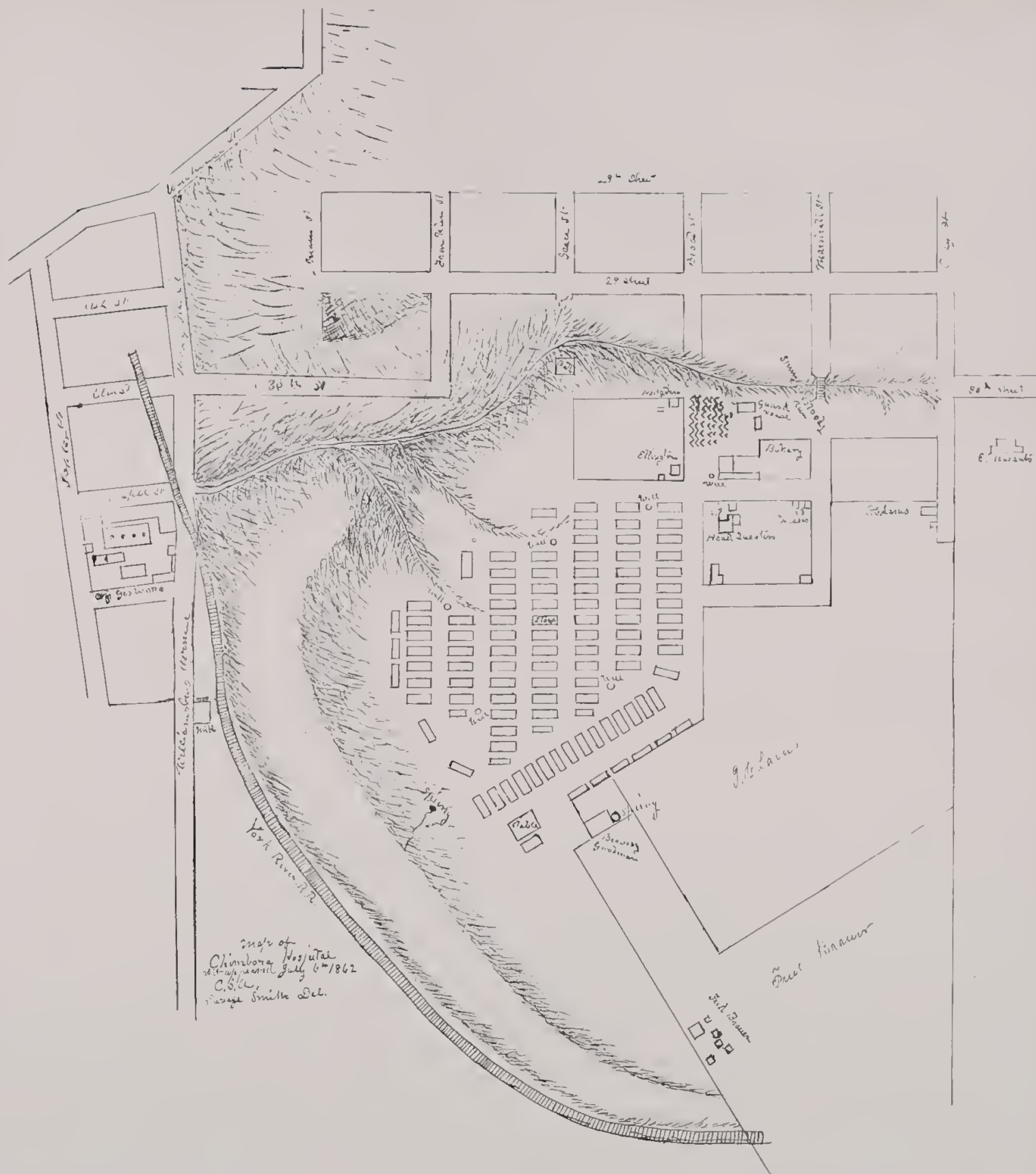
There are areas in Virginia, comprised of several counties not now adequately served by physicians, hospitals, or full-time health services, in which demonstration of community effort in the provision of adequate services might be made with financial participation by the Commonwealth and the local communities. The College would be interested from two viewpoints: (a) the demonstration itself, that

is, of service as a community project, and (b) opportunity for the student of medicine to see community medical, hospital, and public health services operating in a coordinated plan. Thus far there has been no adequate American experience with prepayment plans covering medical and hospital care for the non-payroll and rural portions of the population. Such an area would offer rich opportunity for Virginia to demonstrate the feasibility and worth of such plans, thereby again, as she has so many times before, leading the nation in the solution of important community problems.

VI

Medical education in recent years has developed to a high level of efficiency and the product of the modern school of medicine should be able to serve the community more effectively than did his predecessor of a generation or two ago. The present curriculum, however, is not entirely satisfactory and needs continuous revision. Since there is constant progress in medicine, there must be constant improvement in medical education. Thus far, the war has emphasized the importance of two specific fields in which a better job can be done in medical education, namely, in tropical diseases and in public health and the preventive aspects of medicine. In these two fields, particularly, the medical student of today must be proficient if he is to be the successful physician of tomorrow. In other fields, too, there must be improvement in teaching, with the utilization of new and more effective methods, preferably in small groups, with emphasis on the consideration of problems that are to be seen and dealt with in practice. It is highly desirable that the student have the opportunity of seeing private patients in a physical setting more closely related to that of private practice than that provided in the outpatient clinic. The apprentice system under certain circumstances has a contribution to offer and it should be used.

In this same connection, that is, the more nearly adequate preparation of the student of medicine to enter practice, it is believed that the hospital of the smaller community offers opportunities for training. Conditions favorable to the use of such hospitals for resident experience, for example, with benefit to the community in the form of improved service as well as to the resident himself in added experience under competent supervision from the medical center and physicians of the local community, should



Map of
Clinchboro Hospital
at Clinchboro, N.C. July 6th/1862
C.B. Smith
George Smith's Del.

11

not be too difficult to develop after the war, if not in the immediate future.

The educational opportunities to be provided by the medical center include graduate and post-graduate training in hospital, clinic, and laboratory. The war has interrupted the plans of many young men for graduate training beyond the now available shorter intern period of nine months, and this can result only in postwar demands which will overtax existing facilities. In Richmond, a plan has been initiated whereby the internship and resident experience are secured in several hospitals pooling their interests in intern training. Under this arrangement, the intern has the opportunity of working under the supervision of several groups of men in medicine, thereby better preparing himself for the practice of medicine.

The continuation of education beyond the hospital years, moreover, will receive more attention in the future. Continuous education, comprising short-term experience in a facility designed and constructed for the specific purpose and providing an environment favorable to an interchange of experience while student and instructor live and work together, is not a new concept, but its application to medical education has not been attempted in Virginia except in isolated, infrequent, and irregular instances. A well-planned continuing program would offer opportunity to various groups to keep abreast of new developments in medicine and related fields with a minimum of inconvenience, cost, and loss of time.

VII

The services provided by the medical center and by its staff, especially with the benefit of state support, should not be in competition with but should complement the usual medical services of the area served and operate as a resource available for the study of unusual clinical problems and primarily for the teaching of medicine, using appropriate cases therefor. Selection of those eligible to receive services within the center should be made on well-defined and sound basic principles with consistent administration of the necessary procedures with expedition, efficiency, courtesy, and friendliness. The costs of such services, both to the institution and to the patient, should be held at the lowest level consistent with the best service. There should be adequate financial support from the counties for the hospital care of those unable to provide for

themselves, and appropriations of the General Assembly should cover only unforeseen deficits and that portion of the costs properly charged against education. Misunderstandings have arisen over the extent of financial support provided by the Commonwealth. The usual impression is that any resident of Virginia should be able to secure hospital care in the College hospitals since tax moneys are involved in their support. Actually, less than 15 per cent of the total budget required to operate the College hospitals comes from the General Assembly appropriations.

Adequate funds are not now available in the budgets of the counties of Virginia to cover the costs of medical and hospital care of the underprivileged. County governments should meet these needs from tax funds on the county base. The need will be met only when there is local acceptance of the responsibility. Obviously, it would be unwise for each county to provide a hospital for this type of service, but through inter-county contracts or contracts with already existent hospitals excellent care could be provided at reasonable rates.

VIII

These comments are presented with the hope that readers of the MONTHLY, including alumni of other schools as well as those of the College, will become actively interested in the solution of problems related to medical education and service, especially as these exist in the Medical College of Virginia. The status of the College as a regional medical center of education, research, and service is limited only by the extent and scope of the loyalty, confidence, and support given by those who benefit from her facilities. The Medical College of Virginia has deserved loyal support down through the years. Certainly she deserves even greater pride and loyal support now. It is our purpose to work diligently to the end that the College, under circumstances and with relationships cited herein, may provide more effective services and constantly improved and continuing educational opportunities and thereby win and hold the respect, confidence, loyalty, and active support of every individual and group benefiting therefrom. These objectives cannot be achieved by one individual or by a small group, even though great effort is put forth; their achievement will require the concerted effort of all those involved. May we depend upon your participation?

Map of Chimborazo General Hospital, C. S. A. as it appeared July 6, 1862
SAVAGE SMITH, DEL.

LITTLE has been known as to the exact location and the detailed lay out of the Chimborazo General Hospital. This hospital was built by slave labor to care for the wounded and sick of the Confederate States Army and consisted of very many one story wooden pavilions or wards. It became famed on account of the low mortality rate and the vast number of patients taken care of. As a consequence of the blockade of the Confederate States there was a great scarcity of all materials and supplies. There was also a serious shortage of personnel, including doctors, yet this hospital was managed in a most efficient way and achieved the remarkable result of lowering the general mortality to less than 10 per cent. The number of patients taken care of and the mortality rate has not been surpassed until the present World War II. The map shows that the site of the hospital on July 6, 1862, was bounded by Clay Street on the north, Bloody Run on the West and the York River Railroad on the southeast. It was situated on the high elevation of Chimborazo Hill, flooded with sunlight, swept by southern breezes and commanded a beautiful outlook. On July 6, 1862, the hospital consisted of over 100 buildings, 98 of these buildings being pavilions for housing patients. These buildings were situated in rows facing south and overlooking the brow of the hill with streets between the rows of buildings. North and east of these pavilions were situated the headquarters, kitchen or bakery, the guard house, the dead house and the latrines, which were somewhat down the hill apparently draining into Bloody Run.

Numerous wells and springs furnished the water supply. A store house, corresponding to the modern central supply depot, was in the center of the pavilions where it would be most accessible. There was a large stable to the east taking care of the horses used for transportation. The milk house or dairy was on Williamsburg Avenue just across the York River Railroad on the south.

One of the most interesting features of this map is that it contains a list of the corps of officers of the general staff, headed by Dr. James B. McCaw, Surgeon in Chief. A list of the personnel of the First, Second, Third, Fourth and Fifth Divisions, including the names of the surgeons, stewards, apothecaries and other personnel, appears below. Discoloration of the original, due to contact with a piece of black walnut, prohibited the reproduction in legible form of the names of members of the staff.

As the war progressed this hospital was greatly enlarged, overflowing into the surrounding property and a great many additional buildings were added so that ultimately it is said to have accommodated from eight to ten thousand patients.

This map is from the papers of Dr. James B. McCaw and the original is now the property of his grandson, Dr. James McCaw Tompkins. A photostatic copy of the original map is in the library of the Medical College of Virginia.

<i>Chimborazo C.S. General Hospital</i>		<i>2nd Division</i>	<i>4th Division</i>
<i>Corps of Officers</i>		Dr. Habersham, Surgeon	Dr. Davis, Surgeon
Dr. J. B. McCaw, Surgeon In Chief		1st Asst.	Assts.
Wm. E. Trahem, Clerk		2nd "	Jno. Clark, Steward
Capt. Thos. E. Ferrell, Commissary		3rd "	
		4th "	<i>5th Division</i>
<i>1st Division</i>		Augustus Gates, Steward	Dr. E. M. Seabrooke, Surgeon
Dr. Brown, Surgeon		Erastus " , Asst.	" Frank J. White, 1st Asst.
" Mobley, 1st Asst.		<i>3rd Division</i>	" Jerome J. Cherry, 2nd Asst.
2nd "		Dr. E. H. Smith, Surgeon	" Chas. J. Morse
3rd "		" David Smith, Asst.	" Trevillian
4th "		" Washington "	" Dunkley
Nelson Turnley, Steward		" W. W. Dickie "	Snesdorf, Apothecary
Bernard Morris, Asst.		Wm. K. Smith, Steward	Steward
		Jas. P. Shark, Asst.	Savage Smith, Asst.

THE SYNDROME OF CERVICAL ROOT COMPRESSION AND BRACHIAL NEURITIS FOLLOWING LATERAL HERNIATION OF THE INTERVERTEBRAL DISC

With Comment On Central Midline Protrusions

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INTRODUCTION. The present report is a clinical study of three cases of protruded cervical intervertebral disc, with the associated neurological findings. The protrusion was verified and removed at operation in each case, with complete recovery except in the patient with central protrusion. The first two cases represent a definite neurological syndrome due to lateral protrusion of the disc, with nerve root compression and brachial neuritis, without involvement of the cord. The third case is one of a centrally-placed protrusion with symptoms of complete cord compression, indistinguishable preoperatively from the more common true cord neoplasms, and is included only to demonstrate the variable neurological picture produced by disc lesions in the cervical region.

These lateral *cervical* protrusions are analogous to the more common *lumbar* protrusions, brachial neuritis resulting in the former, and sciatica in the latter instance. The literature is replete with reports of herniations of the *lumbar* disc, but there are very few descriptions of *cervical* protrusions, especially the lateral protrusions with only the nerve root syndrome. Semmes and Murphey¹ recently reported 4 cases of lateral cervical protrusions at the sixth cervical disc space, with compression of the seventh cervical nerve, 3 of which were verified at operation. In each of our 2 similar patients, it was the eighth cervical nerve root which was compressed at the seventh cervical disc space. Stookey reported in 1928,² and in 1940,³ three different neurological syndromes which could result from herniation of the cervical intervertebral disc; that of unilateral cord compression, that of bilateral cord compression, and that of nerve root pressure alone without cord involvement (mildest type). Case 3, herein reported, demonstrates, during the various periods of the history, all three of the syndromes described by Stookey.

CASE 1

SUMMARY OF CASE. A 43-year-old white shipyard worker was admitted February 27, 1943, and discharged March 15, 1943. Immediate onset of severe pain in posterior part of left shoulder, with radiation into precordium and down left arm, followed an injury to neck six months before admission. The pain was associated with intermittent bouts of stiff neck. It was intensified by coughing, sneezing, straining, and all motions of neck. Removal of ruptured disc on the left side between C.7 and T.1 vertebrae produced complete relief.

History. Immediate onset of severe pain in the posterior part of the left shoulder with radiation into the precordial region, and down the left arm, was experienced in August, 1942, when the patient attempted to lift a ramp on a barge, using his left shoulder as a lever. The precordial pain was never so severe as the shoulder and arm pain, and disappeared in several days, whereas the shoulder and arm pain has been continuous. Together with the shoulder and arm pain, he has had intermittent bouts of stiff neck. Since November, 1942, the pain has radiated down into the ulnar side of the left hand with associated numbness of the little, ring and middle fingers, and some weakness of hand grip. The pain is intensified by coughing, sneezing, straining, and all movements of the neck, especially extension and rotation of the head to the left, by lying flat on his back, and by shrugging his shoulders. He can sleep only when lying on his right side. Supporting the left arm with his right hand usually brought relief. He was studied in another hospital in December, 1942, where x-rays of the cervical spine and lumbar puncture were reported to him as being normal. He was told he had brachial neuritis, and was given physical therapy without benefit. Since the onset, the pain has been agonizing and disabling, completely preventing him from working in the shipyard.

Examination. General medical examination revealed no significant abnormality. The patient pre-

ferred to lie in bed on his right side, and, when lying on his back, he complained of severe pain in his left shoulder and arm. There was no doubt that the patient had severe pain. His neck was held moderately rigid, and slightly flexed. All passive movements of the neck, especially extension and rotation to the left, caused pain, as did traction on the left arm. There was hypoesthesia over the ulnar border of the left hand including the little, ring, and middle fingers. There was no tenderness over either scalenus tendon, or circulatory disturbance in either hand. Firm pressure over the seventh cervical interlaminar space on the left side produced severe local pain with radiation into the left supraspinatus region and down into the ulnar border of the left hand, whereas pressure on the opposite side or at any other level of the cervical spine caused no pain. Bilateral jugular compression did not intensify the pain. There was slight weakness of grip in the left hand. The deep tendon reflexes were normal. The blood pressure was normal in each arm. X-ray examination of the cervical spine showed no evidence of bony abnormalities. Lumbar puncture revealed normal dynamics. Examination of the spinal fluid showed 55 mg. protein per 100 cc., 1 leucocyte per high power field, and a negative Wassermann. One cc. of iodized oil (Descendant Lipiodol), introduced into the subarachnoid space by cisternal puncture, broke into globules, and no helpful information was obtainable from fluoroscopic examination. The preoperative diagnosis was that of an intraspinal lesion between vertebrae 7C. and 1T., with compression of the eighth cervical nerve root on the left; most likely a protruded disc. An exploration of the spinal canal was advised, and the patient readily agreed to this, stating "I would be willing to have my arm cut off to get rid of the pain."

Operation. On March 1, 1943, a left partial hemilaminectomy of the seventh cervical and first dorsal vertebrae was performed by Dr. Coleman, exposing the eighth cervical root as it coursed out through the intervertebral foramen. The root was swollen and tense, and appeared to be displaced backward by an underlying mass. Upon retracting the root away from the mass a typical herniated disc was exposed presenting quite laterally and compressing the root without indenting the dural sac. The capsule of the disc was incised and at once there was extruded the contents of the herniated nucleus pulposus under pressure. The remaining nuclear material was re-

moved with a Kelly hemostat, and the nerve root was thus completely decompressed.

Post-Operative Course. Following the operation, the patient was immediately and dramatically relieved of his pain. The sensory disturbance (hypoesthesia) did not completely disappear, but at the time of discharge, on the fourteenth post-operative day, the strength in his left hand had completely returned. Three months following operation, he was able to return to his former occupation. A checkup examination on December 5, 1943, revealed no sensory or motor disturbance in the left hand or elsewhere, and there has been no recurrence of his pain.

CASE 2

SUMMARY OF CASE. A twenty-seven-year-old white woman was admitted March 26, 1943, and discharged April 11, 1943. There had been spontaneous severe pain in the posterior aspect of the left shoulder for one year, with radiation into the left arm and hand. This was associated with intermittent bouts of stiff neck. The pain was intensified by coughing, sneezing, straining, and all motions of the neck. Removal of a left-sided ruptured disc between vertebrae 7C. and 1T. produced complete relief.

History. In March, 1942, the patient first noted pain in the posterior aspect of the left shoulder, with radiation down the left arm to the elbow, associated with intermittent bouts of stiff neck. The pain was most severe in the region of the elbow. *There was no history of acute injury.* Since the onset, with the exception of an unexplained free interval from September to December, 1942, the pain has been continuous.

During the summer of 1942 the patient was unable to lie down because this position increased the pain, and for three months she slept in a sitting position in a chair, supporting her left arm and shoulder with her right hand, or on the arm of the chair.

The pain was aggravated by coughing, sneezing, or straining. All movements of the neck, especially extension and rotation to the left, likewise intensified the pain. She had not noticed any coldness of the left hand, but recently there had been a prickly feeling of the left little, ring, and middle fingers.

On the night before admission, for the first time, she had severe pain in these fingers. She was unable to carry any weight in her left hand because it increased her pain. Lowering of the shoulder girdle accentuated the pain, while elevation of the

shoulder gave relief.

At the onset of the pain she was advised that it was neuritis and had her tonsils removed without elimination of the pain. Since onset, the pain has been agonizing and disabling.

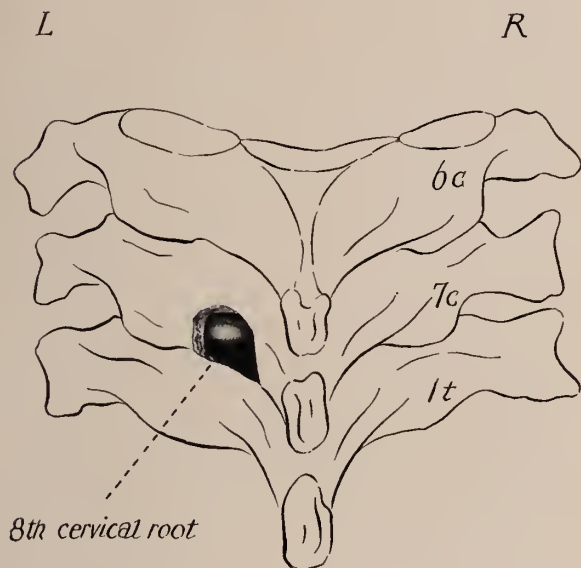


Fig. 1.

(a) Case 2. Artist's drawing at time of operation. Eighth cervical root on the left side has been exposed following removal of a small amount of bone from inferior border of left seventh cervical lamina. The root appears to be under tension from a mass anterior to it.

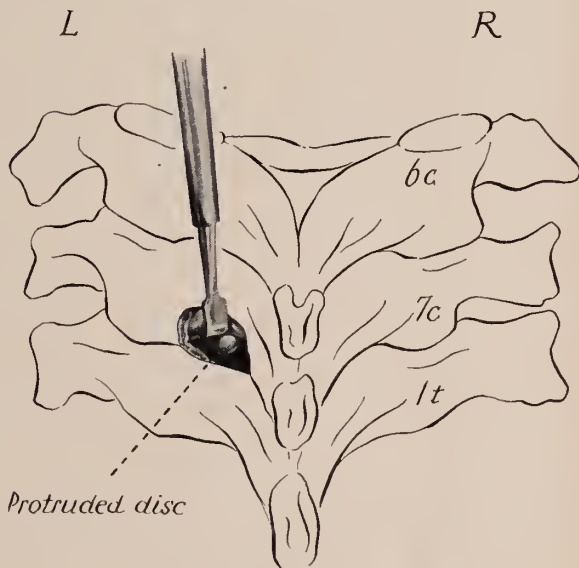
Examination. The general medical examination revealed no significant abnormality. There was no doubt that the patient had genuine pain. The neck was held rigidly, and all passive movements, especially extension and rotation to the left, as well as downward traction on the left arm, intensified the pain. Firm pressure over the seventh cervical interlaminar space on the left side produced excruciating local pain with radiation into the dorsum of the left hand, duplicating the pattern of her pain radiation. Pressure on the opposite side, or at any other level, did not cause pain. Pressure over the insertion of the left scalenus anticus tendon also produced pain with radiation into the left arm, but not so severe as the pain described above, while pressure on the right scalenus anticus tendon produced no discomfort. There was no weakness or atrophy of the left hand, nor was there any objective disturbance of sensation in the arm, hand or fingers. The tendon reflexes were normal. There was no temperature change in the hand, nor was any circulatory disturbance noted.

X-ray examination of the cervical spine was normal, revealing no evidence of cervical rib or arthritis.

A lumbar puncture was not performed because of the clinical resemblance to Case 1, operated upon about four weeks previously (*Vide supra*).

From the history and distribution of the pain, together with the palpable tender point as described, and the clinical similarity of this case to Case No. 1, a diagnosis of rupture of the intervertebral disc at the seventh cervical interspace on the left side was made, with compression of the eighth cervical nerve root.

Operation. On March 27, 1943, a partial hemilaminectomy was performed by Dr. Coleman, exposing the sixth and seventh cervical interlaminar spaces on the left side. A small portion of the two adjacent laminae of vertebrae 7C. and 1T. was removed, and, when the ligamentum flavum was resected, the eighth cervical nerve root was exposed (fig. 1a.) It was flattened and displaced backward by an underlying mass. The root was carefully lifted away from the mass and a ruptured disc about one-half inch in diameter was found (fig. 1b). The capsule of the disc was incised and the nuclear material extracted with-



(b) Case 2. The left eighth cervical root has been lifted and retracted cephalward exposing the underlying protruded seventh cervical disc.

out difficulty, the nerve root being completely decompressed.

Post-Operative Course. Following the operation, the patient was immediately and completely relieved of her pain. She was discharged from the hospital

on the fourteenth post-operative day. A letter from the patient on December 9, 1943, states that she has had no recurrence of the pain, and is entirely relieved.

COMMENT ON CASES 1 AND 2

Both of the above cases present a definite neurological syndrome produced by *lateral* herniations of the seventh cervical intervertebral disc with compression of the eighth cervical nerve root analogous in every way to the much more common lumbar protrusions producing sciatica. In Case 1, trauma was apparently the precipitating factor, while in the other (2), no history of trauma was elicited. In addition to the shoulder, arm, and hand pain, the first patient complained of precordial pain which disappeared in a few days.

Recently, Semmes and Murphey¹ have described four cases, all of which had unilateral herniations of the sixth cervical intervertebral disc compressing the seventh cervical root. Every one of their patients had anterior chest pain closely simulating coronary occlusion or angina pectoris, two of the patients being physicians.

Both of our patients (Cases 1 and 2) complained of subjective sensory loss in the middle, ring, and little fingers, but only in the first case was there objective sensory loss in this region. In the first case, there was weakness of the left hand grip, while the second case had no such weakness. Otherwise, the two cases were identical.

As emphasized recently by Coleman⁴ and by Spurling and Grantham,⁵ it is true, perhaps, that many cases diagnosed as demonstrating the scalenus anticus syndrome, and not relieved by section of the scalene tendon, are actually cases of herniation of a cervical disc or other cervical spine disease. Such a lesion should be classified as an example of the secondary or reflex scalenus anticus neuro-circulatory compression syndrome, requiring, for its cure, removal of the herniated disc rather than section of the scalene tendon. On the other hand, it is certainly true that there are many cases of primary scalenus anticus neuro-circulatory compression, not due to any remote lesion, requiring for their cure, simple section of the scalene tendon.

It is important to have x-ray films made of the cervical spine in all cases of brachial neuritis, whether or not the individual case demonstrates the scalene syndrome, in order to rule out cervical spine

disease (tuberculosis, cervical ribs, traumatic lesions, metastatic lesions, etc.) as the primary cause of the brachial neuritis, rather than compression of the brachial plexus by the scalene tendon or other more peripheral lesions.

A very important diagnostic point, too little emphasized in the literature, in our opinion, is the presence of localized tenderness to firm pressure applied by the examiner's thumb over the suspected interlaminal space, with radiation of pain into the adjacent extremity, whether lumbar or cervical. Particularly would we emphasize its importance in *cervical* protrusions; in the two cases cited above, it was only by this simple test that precise surgical localization was possible. We believe that the complete absence of this sign is rather strong evidence against the presence of a laterally situated herniated disc at any level of the spine.

CASE 3

SUMMARY OF CASE. A thirty-eight-year-old colored male convict was admitted July 31, 1942, and discharged September 22, 1942. A minor injury to the neck in 1935 was followed by neck and right shoulder pain which promptly cleared up but recurred intermittently at long intervals to involve both shoulders with some radiation into the hands, especially the right hand. Three months prior to admission, he experienced pain in the neck and both shoulders with radiation to both hands which was continuous for three weeks. He then rapidly developed paralysis of the right leg with numbness of the left leg. Three weeks later, there occurred progressive weakness of the left leg associated with numbness of the right leg. Following lipiodol study, a diagnosis was made of a cervical intraspinal mass lesion. A centrally-placed herniated nucleus pulposus at the sixth cervical disc space was removed at operation.

History. Following an apparently trivial injury to the neck in the course of a football game in 1935, the patient experienced pain in the neck which radiated down to the right shoulder. This pain subsided after a few weeks, but recurred at intervals until admission. It was aggravated by coughing, straining, sneezing, and movements of the neck. Occasionally, it radiated to the left shoulder and down both arms to the ulnar sides of the hands, especially the right hand. Three months prior to admission, the pain in this distribution became continuous for three weeks, following which, over a period of a few days, there developed complete paralysis of the right leg and numbness of the left leg. Within three weeks, paralysis of the left leg and numbness of the right leg occurred. Partial

urinary retention, with marked obstipation, developed.

On admission, neurological examination revealed complete spastic paraplegia, extensor weakness of both forearms and bilateral weakness of hand grip. There was complete sensory loss of pin prick appreciation on the left side, and dense hypoesthesia on the right side up to dermatome 8C. anteriorly. There were hyperactive tendon reflexes of the lower extremities with bilateral sustained ankle clonus and bilateral plantar response to the Babinski test. Tendon reflexes in the arms were normal. Functional review of the cranial nerves revealed no abnormalities, and there was no Horner's syndrome. There was tenderness on palpation over the spinous processes of 6C., 7C., and 1T. vertebrae, and bilateral jugular compression produced severe pain in the lower cervical spine with radiation to the right shoulder. A Queckenstedt test, with the spinal puncture needle in the third lumbar interspace, revealed a complete dynamic (subarachnoid) block. Examination of the lumbar spinal fluid showed 180 mgm. of protein per 100 cc., 4 cells to high power field, and a negative Wassermann reaction. Iodized oil (Descendant Lipiodol, 1.5 cc.), introduced into the subarachnoid space via cisternal puncture, revealed, under the fluoroscope, an incomplete block at the level of the sixth cervical intervertebral disc (fig. 2). A pre-operative diagnosis of extradural spinal cord tumor at C.6 vertebral level was made.

Operation. Laminectomy was performed on August 7, 1942, at the sixth and seventh cervical and first dorsal vertebral level by Dr. Ulmer. Upon opening the dura mater, it was evident that there was a mass anterior to the spinal cord. Gentle retraction of the spinal cord to the left exposed a mass anterior to the ventral dura, protruding centrally and to the right. Through a small paramedian incision in the anterior dura, a mass of fibro-cartilage, apparently extruded from the sixth intervertebral space, was identified and removed.

Post-Operative Course. Following a smooth post-operative convalescence, neurological examination showed normal sensation in the legs and trunk, except for non-perception of vibratory stimuli in the legs and feet. There was hypoesthesia over the ulnar aspects of the forearms and hands. Bladder and rectal sphincters were functioning normally. Voluntary movements of all muscles of the legs, although weak, were present. Examination three

months following the operation revealed marked increase of motor power in the legs, although the gait was characteristic of spastic weakness of the legs. The sensory loss previously noted in the upper extremities had disappeared, although there remained

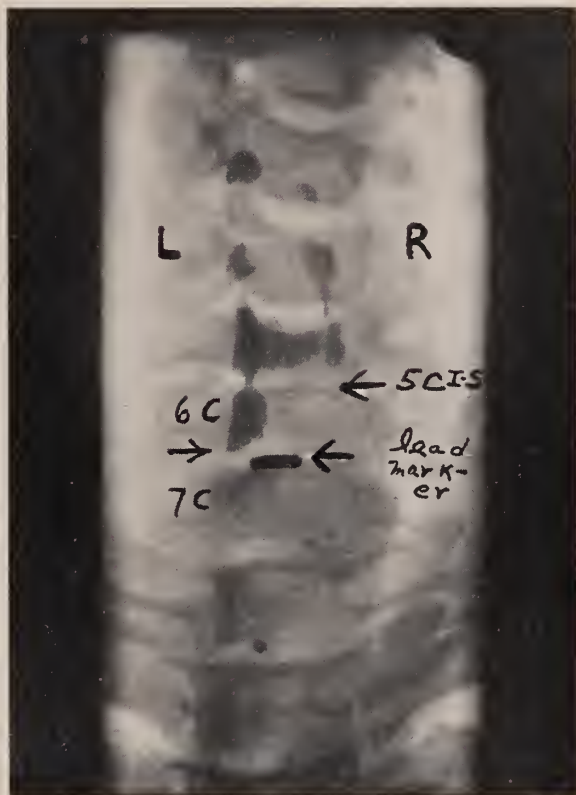


Fig. 2.

Case 3. Cisternal lipiodol (1.5 cc.). The lead marker (placed preoperatively) indicates the location of the centrally protruded sixth cervical disc which, presumably, extends more to the right than to the left side. The patient was in an erect position when this film was made.

slight bilateral weakness of each hand grip. The patient is now working as an orderly in the prison (January, 1944).

COMMENT ON CASE 3

This patient presented a clinical picture indistinguishable (both by clinical examination and by lipiodol studies) from a true extradural spinal cord neoplasm. However, the history of trauma together with the long duration and the intermittency of symptoms are more suggestive of a protruded disc than of tumor. The pathogenesis is identical in all three cases, the third case differing from the other two in this paper only in the location and extent of the protrusion.

As described by Stookey, the disc in this case first appeared apparently to the right side of the sixth cervical interspace, producing the syndrome of nerve root pressure alone as in Cases 1 and 2 herein reported, followed by a Brown-Séquard syndrome, and eventually the fibrocartilaginous mass herniated through the entire intervertebral space, causing a complete spastic paraplegia and bilateral numbness to dermatome level 8C.; that is, Stookey's "syndrome of bilateral ventral pressure". In other words, this patient's lesion ran the whole gamut of possibilities that a protruded cervical disc may produce, from the milder unilateral syndromes to the most severe pressure on the cord itself (fig. 3).

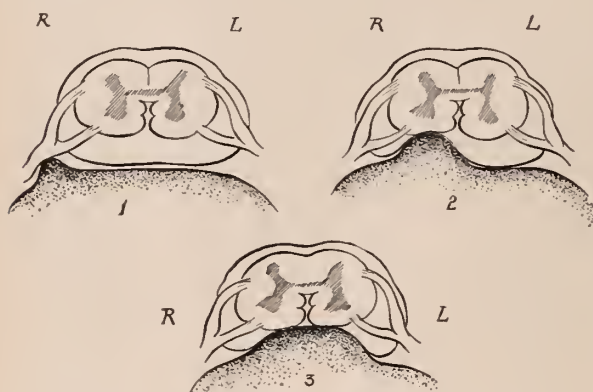


Fig. 3.

Case 3. Schematic drawing demonstrating the probable progression of the herniated disc in Case 3 (see history).

- (1) The early root syndrome in the right arm and shoulder.
- (2) The Brown-Séquard syndrome with weakness on the right side and numbness on the left (intermediate phase).
- (3) The final phase (at time of operation) of complete spastic paraplegia (modified from Stookey B., *Arch. Surg.*, 40: 420, Mar., 1940).

SUMMARY

Three cases of protruded cervical intervertebral disc, with the associated neurological findings, are presented. The first two cases are examples of nerve root compression producing unilateral brachial neuritis alone without cord involvement; the third case is that of an eventual massive central protrusion producing complete paraplegia and subarachnoid block.

In the lateral protrusions (Cases 1 and 2), the exact location of the lesion in the cervical spine is

determined more by clinical examination than by myelography. Localized point tenderness at the involved interlaminal space (whether cervical or lumbar) is stressed as the most important clinical finding; its absence is rather strong but not unequivocal evidence against the presence of a disc.

The clinician must carefully avoid the error of overlooking lesions of the cervical spine (undiagnosed protruded intervertebral discs) as causative factors in the scalene neuro-circulatory compression syndrome. Relief of such symptoms can be achieved only by effective treatment of the cervical spine lesion rather than by section of the scalene tendon. It is suggested that x-ray examination of the cervical spine be made in all cases of the scalene syndrome (brachial neuritis), in order to avoid such an error in diagnosis and treatment, just as films should always be made of the lumbosacral spine in every case of sciatica.

Post-operative relief of symptoms should be excellent in all patients with cervical laterally-placed protruded intervertebral discs (brachial neuritis alone), removed by means of a hemilaminectomy (Cases 1 and 2). When the disc compresses the cervical cord itself to the extent of producing a complete paraplegia, complete relief, post-operatively, is scarcely to be expected (Case 3).

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A REVIEW OF RECENT EXPERIMENTAL WORK ON PERIPHERAL NERVE INJURIES

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Injuries to peripheral nerves in civil life are infrequent, but during war times the medical profession has to take care of a large number of injuries involving sensory, motor, and mixed nerves (up to 3 per cent of the total number wounded). The efficient treatment and rehabilitation of wounded with nerve injuries is important because military efficiency requires an early return to active duty if possible. Still more significant is correct treatment in regard to the return of these men into civil life. Therefore, the present war, like the preceding world war, has stimulated not only clinico-neurologic research concerning nerve injuries, but is giving impetus to a large number of animal experimental studies. As far as the latter work is of any importance for the treatment of nerve injuries, its results are incorporated in this report.

In our age of accelerated mechanization with its growing number of traffic and industrial accidents, the incidence of nerve injury in civil life will increase. It is to be hoped that the lessons learned by the experience and the research of the present war will not be neglected so quickly as those of World War I.

The two main functions of the peripheral nerves are the centrifugal transmission of motor impulses and the centripetal transmission of sensory impulses. Which of these two is most impaired in a given nerve injury, depends on the anatomical relations of the nerve or nerves involved. Surgical treatment for the repair of the nerve is the same for both functions, but rehabilitation of patients with motor nerve injuries offers some further problems.

PHYSIOLOGY AND PATHOLOGY OF NERVE DEGENERATION AND REGENERATION

The loss of the function of a nerve is due either to anatomical interruption or to compression. Only in the latter case may spontaneous recovery occur. Since despite all efforts, no clinical method has been developed to discriminate between these two types of injury, and since nerve block due to temporary compression is rare in war injuries, immediate surgical exploration of the nerves involved is advisable.

According to the findings, either the cause of the compression should be removed or the nerve sutured if severed. The degeneration and regeneration of severed, and then well sutured nerves, is very similar to that of nerves functionally interrupted by compression or crushing. In the peripheral stump of the nerve, the myelinated fibers become fragmented, and the pattern of the nerve is maintained only by the endoneurium and neurilemma. The Schwann cells increase in number and amount of protoplasm. Macrophages enter the Schwann tubes and remove the remains of axons and myelin. In the central stump of the severed nerve, after rather short and only partially degenerative changes of the myelin and of the axons, the latter start to outgrow in a centrifugal direction. In simple compression degeneration of the nerve, the axon cylinder tips grow along their old neurilemma sheaths, now more or less transformed into Schwann tubes. In nerve sutures, the outgrowing nerve fibers have to traverse the suture scar. This is facilitated by Schwann cells which have emerged from the end of the peripheral stump into the scar tissue. If an axon cylinder tip reaches a Schwann tube of the peripheral stump, further growth occurs along its inner wall.^{1, 2, 3} The difference in rate and completeness of nerve regeneration after compression as compared to that after severance and suture, is probably due mainly to the obstacle added by the suture scar. In regeneration after crushing, the peripheral stump of a rabbit nerve contains finally the same number of fibers as the central stump, and the fibers are more or less of normal diameter. However, after section and suture, the number of fibers in the peripheral stump and their diameters are still diminished after a year, although complete functional recovery was attained in two hundred days.⁴ The delay before the central fibers start to grow out is longer in suture, than in compression degeneration, and the final rate of growth in the peripheral stump is slower than after compression or crushing.^{5, 6} The better restoration after compression injury has been utilized with apparent success to improve function in nerves weakened by destruction of some of their

spinal roots. If besides section of some roots, the rabbit nerve was crushed, final recovery of muscle forces was superior to the control side where only the roots were sectioned.⁷ The rate of regeneration decreases with the age of the animals.⁸ The velocity of fiber growth in the peripheral stump in the experimental animals is distinctly higher than 2.5 cm. per month, the value generally accepted as an average for human nerves. However, recently nerve fiber growth of more than 5.0 cm. per month has been observed also in man.⁹

The cutwandering capacity of the Schwann cells from the peripheral stump is, according to tissue culture studies, at its peak about twenty days after section of the rabbit nerve.¹⁰ Corresponding observations have been made in histologic studies comparing repair of primary and delayed sutures. However, delaying the suture did not improve functional recovery, probably due to the fact that medullation of the new nerve fibers is slower in delayed suture. But these experiments demonstrate that for the rabbit, delay of one or two months does not prejudice nerve regeneration, while longer delay produces conditions liable to retard and endanger complete functional recovery.²

NEW SUTURE METHODS

The importance of freshening the nerve ends and of their exact funicular apposition without any tension or torsion, in securing the best possible functional return after nerve suture, is well known from the experimental studies during and since the last war. However, our most meticulous care in these respects will be more or less fruitless if the suture scar interferes too much with the outgrowth and orientation of the central fiber tips. Undesirable cellular and fibrous reactions can be minimized by the choice of the suture material. The most favorable is woman's hair.¹¹ In making the sutures, it is impossible, particularly in smaller nerves, to pass through the nerve sheaths without lacerating some nerve bundles. Therefore, attempts have been made to stick together the stumps with sticky gels. For this, a "glue suture" of either cockerel plasma,¹² autologous plasma,¹³ or concentrated acacia solution fortified with thiamin and B complex¹⁴ has been used in rabbits, dogs, and monkeys. The new fibers grow distinctly faster across such a junction than across the scar of the most perfect suture. This glue method has been found applicable to man,¹⁵

especially if tension on the nerves is avoided by fixation with bridge sutures across the nerve stumps. Another new method is the splicing of the severed nerve ends by sealing them into a common tightly fitting sleeve of artery from another animal of the same species.¹⁶ If fresh arteries are used, their reaction to epinephrine may produce compression damage to the nerve. To avoid this, frozen and then rehydrated arteries¹⁷ have been used with success in rabbits, cats and monkeys.

REPAIR OF NERVE GAPS

In war wounds, a good approximation of the nerve stumps cannot be obtained in many cases on account of destruction of the nerve for a considerable length. To bridge such a gap is essential for restoration of function. By mobilization of the nerve stumps for a long distance above and below the lesion, by transposition of the course of the nerve, and by choosing favorable joint positions, astonishingly large gaps can often be closed by primary suture. If this can be done with not too much tension, the results are more promising than by any other method. "Nerve crossing" is advisable only in special circumstances. "*Suture à distance*", "tubulization", or "nerve flaps" are unsatisfactory. However, a modified flap technic, the "sliding sleeve graft" gave promising result in monkeys.¹⁸ A cylindrical segment, a little longer than the gap, embodying the nerve sheath and underlying nerve fiber bundles, is prepared from the peripheral stump and moved proximally into apposition with the central stump. If end to end suture is impossible, bridging the gap with autografts carefully chosen and well brought into apposition and "glue" sutured seems at the moment to be the method of choice in animals at least. Despite the fact that two nerve sutures interfere with regeneration more than does one suture, the time needed for recovery and the completeness of recovery is not much less than for end to end suture.¹⁹ With homografts it makes no difference if functioning or already degenerated fresh grafts are utilized,²⁰ but recovery of function is always somewhat less favorable than with autografts. Heterografts give rather poor results^{19,21} in comparison with homografts. Since often no fresh homografts are available, various methods for preparing preserved grafts have been tested with satisfactory results, which in the case of nerves stored in cold Ringer solution (2C. up to twenty-

one days) were even better than with fresh grafts.¹⁹ Transplantation of formalized nerves is promising, although the results are not quite so good as with fresh homografts.^{15,22,23} Alcohol preservation seems less favorable.¹⁹ Results with frozen-dried nerves, rehydrated in water vapor before use, are encouraging.²⁴

DENERVATION ATROPHY OF MUSCLE

The time elapsed before the outgrowing nerve fibers reach their final peripheral destination is, for otherwise comparable conditions, proportional to the distance of the peripheral area from the site of injury. The longer the peripheral stump, the longer will be the time before recovery of function starts and also the longer the time until recovery is completed. For re-establishment of sensory function, it is of astonishing little influence if the time needed for nerve fiber outgrowth is short or long. However, for the recovery of function of a denervated muscle, its distance from the site of injury becomes of greatest importance. The shorter the time between denervation and re-innervation, the more complete will be the terminal recovery of motor function. This is due to the fact that from the moment of denervation, the muscle atrophies progressively until re-innervation is established. The more marked the atrophy of a muscle, the smaller is its capacity for functional recovery. Denervation atrophy is the most progressive and the most severe type of all muscular atrophies. But for an initial period, in rats for about fourteen days, in man probably much longer, denervation atrophy has in common with other types of atrophy (due to spinal cord lesions, a cast or tenotomy) the same speed of weight loss, the same constancy of muscle power per weight unit when directly stimulated, the absence of changes in submicroscopical structure, and the presence of certain changes in metabolism.^{25, 26, 27, 28, 29, 30} Only after this initial period do the more degenerative changes which are absent in the other atrophy types become clearly apparent in denervated muscle, and the denervation atrophy progresses further with time.^{25, 30, 31} Even in the initial stage, degeneration atrophy can be discriminated from the other atrophies by the presence of fibrillation^{32,33} which can be detected in man a few days after nerve injury by electrical methods.³⁴ These fibrillations originate from foci in single fibers and spread through them towards both ends, but never cross to adjacent

fibers.^{35,36} With re-innervation, fibrillation disappears quickly and the muscle returns slowly to normal metabolism, while the recovery of weight and strength is a much slower process.

CHEMICAL THERAPY

Since fibrillation characterizes denervation atrophy even in early stages, and since some investigators²⁸ still believe that denervation atrophy is caused by overwork through this fibrillation, the influence of drugs upon fibrillation has been carefully studied.^{37,38} Most authors found that drugs abolishing fibrillation, do not alter distinctly the course of atrophy.^{39,40} Attempts to shorten the duration of paralysis by facilitation with cholinergic drugs had surprisingly beneficial effects in the hands of one investigator,⁴¹ but could not be confirmed.⁴² A considerable inhibition of denervation atrophy in rats and monkeys, as judged by the weight loss of the muscles, was claimed for atropine in large doses by one group of investigators.^{43,44} However, it was demonstrated later on, that this apparent retardation of weight loss of the denervated muscles of the atropine-treated animals is not inhibition of atrophy, but an inanition effect which diminishes the weight difference between denervated and normal contralateral control muscle. If the denervated muscle of a treated animal is compared with the denervated muscle of a normal animal, it becomes obvious that atropine has no beneficial effect.^{45,46,47}

Since vitamin E deficient rats develop a typical muscular dystrophy, alpha tocopherol therapy was tried on rats and on guinea pigs with denervation atrophy, but without any significant beneficial result.⁴⁸ However, the interesting observation was made that the denervated muscles of vitamin E deficient rats, thirty-five days after crushing the nerve, are functionally superior when directly stimulated than are their non-denervated contralateral control muscles. This finding corresponds to the earlier observation that in young rats, nerve section protects the muscle from vitamin E deficiency dystrophy, probably due to the absence of nerve impulses.⁴⁹ Other vitamins were tested, not so much on account of a probable effect upon the muscle, but in the expectation of hastening the rate of outgrowth of the nerve fibers. For this reason probably, thiamin and B complex have been added to the glue employed in "glue" suture.¹⁴ But no beneficial influence was found for thiamin or yeast upon nerve

growth in tissue culture⁵⁰ or upon nerve regeneration in rats.⁵¹ The increase of the rate of nerve fiber growth in tissue culture by Biotin⁵² could not be confirmed.⁵³ In rats, only an insignificant acceleration of nerve fiber regeneration⁵¹ and no influence upon the terminal recovery⁵⁴ has been reported after Biotin treatment.

Not only the stimulation of nerve regeneration, but also its inhibition is of practical importance, since in absence of regeneration, neuroma formation and development of strong adhesions do not occur under aseptic conditions. In rabbits, regeneration and thus neuroma formation could be prevented by subepineural or intraneural injection of 0.1 to 0.2 ml. of a twenty per cent formaldehyde and one per cent gentian violet solution.⁵⁵

PHYSICAL THERAPY

The use of animal experimentation on a statistical scale has long been neglected in deciding physico-therapeutic questions. Since nerve regeneration and functional recovery of the muscle are processes showing much individual variation in the time needed for re-innervation and in the completeness of terminal recovery, experiments on two or even five animals are of little value, especially since with no method can very striking beneficial effects be expected, for various biological reasons. Only for electrotherapy has a fair amount of valuable, statistically sound, data accumulated in the last four years, all demonstrating that electrotherapy can delay not only disuse-atrophy, but can also retard denervation atrophy and hasten the functional return in re-innervated muscle.^{56, 57, 58, 59, 60, 61, 62} All these studies indicate that electrical treatment is valuable only, if the stimuli employed are in strength and duration optimal in regard to the excitability of the paralyzed or recovering muscles, so that short strong tetanic contractions are produced. That means, for instance, that for a muscle with advanced denervation atrophy, short series of galvanic stimuli or short alternating current stimulations of very low frequency should be used. The frequency of the alternating current, or the time a single galvanic shock lasts, the velocity with which the latter reaches its maximal strength, and the duration of the intervals between the galvanic shocks in the series, must be adjusted for each muscle in such a way that a minimum of electrical energy is employed in producing maximal tetanic contraction. In each treat-

ment only 5 to 10 contractions of not more than five seconds duration, with rest periods of ten to thirty seconds between, should be produced to avoid damaging fatigue. The treatment must be frequent, at least once daily. These rules, which in no way are contradicted by physico-therapeutic experience in man, and which have been recommended recently by some experienced therapists,^{63, 64, 65} are not yet generally observed in treatment. This might be due partly to the fact that the commonly used electrical treatment machines do not allow such a meticulous individual adjustment of the currents.

In one study with a limited number of monkeys, the beneficial effect of massage and passive movement therapy upon the functional recovery of denervated muscle has been demonstrated.⁶⁶ A primary rest period (splint) of four weeks gave, in these experiments, uniformly better recovery. In studies with a large number of rats and statistical evaluation, casts had no effect on the rate of denervation atrophy, but definitely retarded the progress of recovery after re-innervation.⁶⁰ Exercise of the rats in a revolving cage did not affect atrophy or recovery.⁶²

SUMMARY AND CONCLUSIONS

The animal experimental studies of the last years have given us valuable knowledge of new methods for nerve suture and for bridging nerve gaps, which are now well enough advanced to be tried clinically. All attempts to influence beneficially denervation and regeneration of nerve, or atrophy and functional recovery of muscle, by drugs or diets have been failures up to now. The general value and the rules which should govern electro-therapy of denervated muscle have been well established, but these basic rules are not yet generally observed in practice. Immobilization of paralyzed limbs should be used only with care and only temporarily. Concerning massage and passive movement therapy, animal experimentation has not yet contributed much. In the future, the most efficient methods of these types of treatment should be worked out in animal studies. Such work has the advantage over clinical studies, in that identical nerve lesions can be produced, that a better uniformity of treatment can be maintained, and that a large number of comparable data is accumulated much more quickly, which permits strictly statistical evaluation. Certainly, confirmation by clinical tests, of the methods worked

out on animals will be necessary. But, according to all our knowledge, the fundamental processes occurring in denervation and recovery of the motor functions are about the same in all species, and only the various time factors involved vary to a considerable extent.

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THE OLD AND THE NEW

The Egyptian Building (1845) in the foreground and the new hospital in the background symbolize the blending of tradition with modern science.

A CASE OF MORVAN'S TYPE OF SYRINGOMYELIA*

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and

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Although frequently recognized in large neurological clinics,¹ syringomyelia is a rare malady to the average physician. The classical syndrome of Morvan's type of syringomyelia is a young individual with beginning pain about the shoulders and arms, followed by loss of pain and temperature sensation, with retention of the sense of touch and later developing trophic changes of the bony structures. Painless indolent ulcers of the fingers and hands are common.

There are many types of syringomyelia and, in a broad sense, the term includes amyotrophic lateral sclerosis, spinal muscular atrophies, spinal tumor forms, and the Morvan type. This type is less often seen and therefore is considered unusual enough to be described.

CASE REPORT

This 49 year old colored female was admitted to St. Philip Hospital in October, 1942. She had enjoyed excellent health up to six years ago, when she developed a severe infection of her right hand and arm. This was followed by a chronic swelling of the hand and arm, with stiffness of the fingers. In a period of four years the left hand and arm also became swollen; both hands and wrists increased in size, with gradual stiffness and flexion of the fingers in the right hand. These structures were not particularly painful, but the patient noticed that she would frequently burn or cut her hands and not be aware of the injury. These wounds would heal very slowly and she was conscious of numbness and tingling in both upper extremities, with occasional vague pains in the wrists or fingers. There was some disability of the right hand, on account of the flexion deformity, but no definite motor weakness or muscle twitchings. The patient denied venereal infection and both her history and those of the family were irrelevant.

Physical Examination. The patient was an obese, intelligent, colored female, complaining of some

stiffness of her hands. The pupils reacted normally, the retinal structures were negative, there were no cranial nerve palsies. The eyes, ears, nose, and throat were normal. The chest wall was normal but the spine showed marked scoliosis to the left, with some dorsal kyphosis and moderate lordosis in the lumbar region. The lungs and heart were not unusual, the blood pressure 130/80. The abdomen was obese and distended, but no masses were palpated. The pelvic and rectal examinations were negative. The hands and wrists were huge and deformed by swelling. The fingers were sausage-shaped and sev-



Fig. 1. Roentgenogram of the left hand, showing disorganization fractures of the wrist and a tendency towards clawing, with slight erosion of terminal phalanges.

eral indolent ulcers were present on the dorsum of the fingers in the right hand, which was held in a flexed, stiffened state. Both wrists were unusually mobile and crepitant but were not tender or painful on motion. The lower extremities did not show any changes. The neurological examination did not reveal any cranial deformities. The biceps and triceps reflexes were absent. All other deep and superficial reflexes were normal. There were no pathological reflexes. The vibratory sense was intact throughout the body, and position sense was normal. There was no atrophy, muscular weakness, or fibrillary twitchings about the body. Pain and temperature sensations were lost in both hands and wrists. There was diminution of pain and temperature sense

*Read at the Richmond Academy of Medicine, October 12, 1943.

above the wrist and on the trunk to the level of the twelfth dorsal nerve segment. Below this segment, pain and temperature sensations were normal. Light touch and tactile sensation was not altered over any part of the body.

Laboratory Findings. The urine was negative for sugar and albumin and the microscopic examina-

Roentgen Findings. Spine: A dorsal scoliosis with convexity to the right and slight lumbar scoliosis with rotation of vertebral bodies. The left third rib posteriorly was fractured. Hands: There is disorganization, with old fractures, of both wrists, and a tendency towards "claw" hands, slight erosion of terminal phalanges and marked soft tissue swelling.

The clinical course in the hospital was not unusual. The patient was given large doses of thiamin hydrochloride and deep x-ray therapy was instituted and was continued after the patient left the hospital. She has been followed at the out-patient



Fig. 2. Roentgenogram of chest, showing dorsal scoliosis with convexity of spine to the right and fracture of the left third rib posteriorly.



Fig. 3. The hands, with typical sausage-shaped fingers and fleshy swelling.

tion was normal. The hemoglobin was 86 per cent (Sahli), erythrocytes 4,330,000, white cell count 12,150, with 71 polymorphonuclear neutrophils and 29 lymphocytes. The blood sugar was 104 mg. and the non-protein nitrogen 30 mg. per 100 cc of blood. The Wassermann and Kline tests were negative. The spinal fluid was clear and under a normal pressure and there was no evidence of a spinal fluid block. The fluid contained 30 white blood cells, 10 polymorphonuclear neutrophils and 20 lymphocytes. The spinal fluid Wassermann was negative. The sedimentation rate was normal and a 1-10,000 tuberculin skin test was normal.

clinic and seems to have improved, as the ulcers on her hands are disappearing and there is less numbness about the upper trunk and extremities.

DISCUSSION

The bone and joint changes in our case are described as "Charcot joints". Mandeville,² discusses in detail the significance of joint changes in Morvan's disease. The gist of his discussion is that many roentgenologists and clinicians assume that when "Charcot joints" are diagnosed, it signifies syphilitic disease of the bone. This certainly is fallacious, because Charcot in 1868 described these bony changes as being present in other conditions besides syphilis. It has been demonstrated that direct injuries to the spinal cord, as in stab wounds, myelitis, spina bifida, and other cord lesions, may produce the same type of arthropathy described as a "Charcot joint".^{3,4} This confusion in diagnosis could not be present in our case, because the bony

changes were bilateral and in the upper extremities, and the blood and spinal fluid Wassermanns were negative. Usually in Morvan's type of syringomyelia, loss of tactile sense may occur, but in our case tactile sensation was preserved, probably because the tactile fibers in the posterior column had not been involved in the disease process.

Dyke and Davidoff⁵ review the roentgen treatment in syringomyelia and conclude that a certain number of cases do improve. They report improvement in seven cases, and Gurevitch et al.⁶ report on 137 cases, with 70 per cent improving by deep x-ray therapy. It is obvious that there is a necessity for differentiating between late syphilis and syringomyelia, because it would be useless to treat these cases with antiluetic therapy rather than giving them the benefit of deep x-ray therapy.

SUMMARY

This is a presentation of Morvan's type of sy-

ringomyelia. It is obvious that the disease is not difficult to recognize if the cutaneous sensory phenomena are present. We would like to emphasize again the necessity of carefully evaluating all cases of "Charcot joints", as very often they are probably due to syringomyelia rather than syphilis.

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THREE BEARS

These symbols of the Indian Medicine Man play in front of the Hospital entrance.

STRUCTURE AND FUNCTION OF THE MAMMALIAN CEREBRAL CORTEX AT THE TIME OF BIRTH

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THE PROBLEM

The time of birth is the most decisive moment in a mammal's life history, representing the passage from one form of existence to an entirely different one, namely from protection to independence, or from being attached to another living being to becoming an individual. Although the embryo is well prepared and well equipped to meet the requirements of its new condition, and although it may display at earlier stages of its development numerous functional *elements* needed for extra-uterine life, there will still be the new and enormous task to carry on this extra-uterine life *as a whole* and to endure under the new conditions. In spite of the impressive results yielded by the experimental study of prenatal functions in recent years, no anticipation of fragments of post natal activities can give a true picture of what an animal has to face and what it really has to accomplish at the very moment of birth. To learn the structure of the brain of a new-born mammal will thus be a problem of fundamental importance to any scientist or physician trying to correlate structure with function.

THE CORTICAL STRUCTURE OF THE NEW-BORN MAMMAL

As early as in the third month of intra-uterine life the prodromal stage of the cerebral cortex* begins to appear in the human embryo, the so-called cortical layer (His) or lamina granularis primaria (M. Rose). It is composed of neuroblasts which have migrated from the periventricular regions of their origin towards the outer surface of the embryonic brain wall. The new layer is separated from the outer surface by a small (marginal) layer, poor in cells, which will be the first or molecular layer of the definite cortex. A new step in cortical development is made as soon as the so-called tectogenetic and fundamental type of the mammalian cortex is reached and this takes place between the sixth and the eighth month of the intra-uterine life in the

human embryo. About this time, two light, broad zones appear, one above, the other below the central zone of the cortical layer, due to a looser arrangement of cells in those zones. This is already the six layer type of the definite cortex, the central, dark zone foreshadowing the fourth layer (lamina granularis interna); the lighter zone above, the third layer (pyramidal layer); and that below, the fifth layer (lamina ganglionaris); the second (lamina granularis externa) and sixth layers (lamina multiformis) being what remains of the originally unstratified cortical layer.

In an adult individual, however, the cerebral cortex will not show this same cyto-architecture at all of its regions. The fundamental six layer type will undergo what are called regional variations. The most outstanding variations concern the number of the layers of the cortex. In what is generally called the motor cortex (area 4, Brodmann; area FA, Economo-Koskinas), the fourth layer (lamina granularis interna) is lacking in the adult brain. The transformation of nearly all of the cells of this area into pyramidal cells and the appearance of unusually large cells in the fifth (ganglionic) layer are additional criteria of this cortical type ("pyramidization"). In the visual cortex (area 17, Brodmann; area OC, Economo-Koskinas) of the adult individual, the fourth layer will either be unusually broad or divided into sublayers, separated from one another by a lighter zone poor in cells (stria Genari), the density and smallness of nearly all of the constituent elements of this cortex being other criteria of this type (Koniokortex).

We have but a very incomplete knowledge as yet as to the time at which the various cortical areas reach their definite regional characters. Roughly speaking, most of the regions of the cortex of the human new-born show already their definite cyto-architecture.⁵ Therefore, those three decisive steps in cortical development (formation of the cortical layer, of the tectogenetic and fundamental type, and finally that of regional variations) are made during intra-uterine life in the human species.

*In this study the term cortex is used as synonymous with the term neo-cortex, i.e., that part of the cortex which is the most characteristic and the most extensive of the mammalian forebrain.

But a mammal can be born at any of those three decisive moments of cortical development. As has



Fig. 1. H.-E. x 100.
Unstratified cortical layer (C.L.) of the new-born bear.

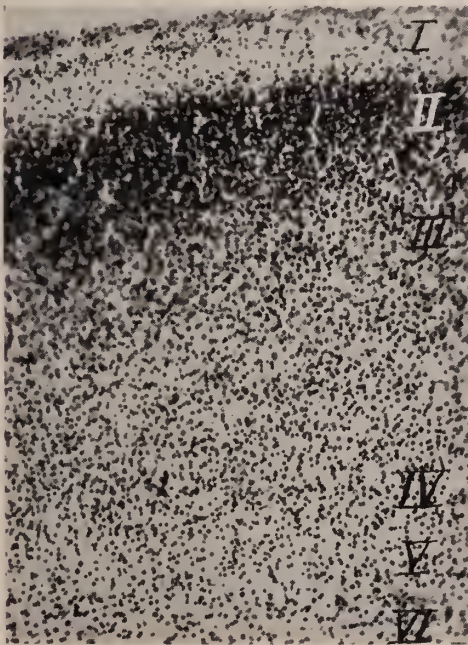


Fig. 2. H.-E. x 210.
Six layer cortex of the new-born rat.

1), thus recalling very early stages of cortical development of the human embryo. In the new-born rat, this cortical layer is just undergoing its first stratification. At the time of birth the cortex of the rat shows indeed the six layer type of the mammalian cortex to a large extent (fig. 2), although the medial, frontal and occipital regions of the hemisphere are not yet participating in this lamination. It seems, that the supradiastriatal regions in which the fundamental tectogenic cortical type begins first to appear, are very actively growing and differenti-

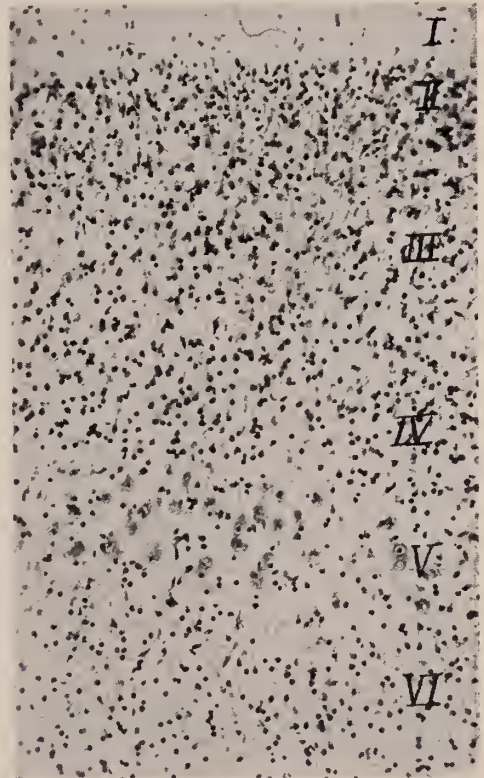


Fig. 3. H.-E. x 200.
Motor area (area 4 Brodmann) of the new-born cat.

ating regions, since in the same regions, the cortical layer can be distinguished first at an earlier stage of development.

Finally, in the new-born cat, the neo-cortex has not only reached its fundamental six layer type, but it reveals also the regional variations so characteristic of the mammalian cortex. However, the structure of the individual cells constituting the various layers of this cortex is still embryonic in character. Therefore, those regional variations based on the structure of the individual cell of the adult brain, such as pyramidization and granularization (Koniokortex),

been shown by me in previous publications,¹ the bear is born with an unstratified cortical layer (fig.

are not recognizable as yet in the cortex of the new-born cat. The criteria of the motor cortex* in the new-born cat (fig. 3) are its thickness, its large molecular layer and the giant cells of Betz in the ganglionic layer. According to my investigations this area is still granular, i.e. it has its fourth layer (lamina granularis interna), in the new-born cat. The visual cortex of the cat at the time of birth (fig. 4) is already characterized by the density of



Fig. 4. H.-E. x 200.
Area striata (area 17 Erodman) of the new-born cat.

its cell elements and the thickness of the fourth layer, the latter, however, admitting of no sublamination.

INTERPRETATION IN THE LIGHT OF THE NATURAL SYSTEM OF MAMMALS

In comparative neurology, brain forms are described and classified according to the well-known

classification of the various orders to which a given brain belongs. We may thus distinguish a Primates brain, a Carnivora brain, a Rodentia brain, an Ungulata brain, a Chiroptera brain, a Cetacea brain, etc. Although peculiarities of brain structures are encountered in each of these groups, and although a given group (Cetacea), when living under conditions foreign to the whole class (Mammalia) may reveal structural arrangements of its brain recalling those of another class living exclusively under those conditions (so-called "convergences"),⁴ we will not give up our classification of brain forms according to the zoological order to which each type belongs. But according to my investigations this principle breaks down when considering the mammalian cortex *at the time of birth*. One can hardly imagine a greater difference than that between the cerebral cortex of the new-born bear and that of the new-born cat. Both, however, belong to the same order, namely to the Carnivora; the bear being born with an extremely immature cortical structure, and the cat having already its typical six layer mammalian cortex with regional variations. Further investigations will have to show if the same holds true for other mammalian orders. A cursory study of the cortex of the new-born guinea-pig reveals a much more advanced stage in cortical development than that we encountered in the new-born rat. Both those species, however, belong to the same order of Rodentia. The result of our cyto-architectural studies is in conformity with that of the morphological studies of the brain surface of new-born mammals. We know that the pallium of the bear is still smooth at the time of birth, whereas that of the cat shows already its definite convolutional pattern at the same moment (Anthony,—quoted from Riese¹). From all of these observations the conclusion can be drawn that *the mammalian cortex at the time of birth is not a characteristic proper to an order, but rather proper to a species*.

INTERPRETATION IN THE LIGHT OF TIME

At first approach one would expect that a considerable amount of time would be necessary for the formation of a highly organized cortical structure, less time being required for the formation of a primitive cortex. However, such an immature cortex as that of the new-born bear needs 207 days of gestation, the somewhat more advanced cortex of the new-born rat only 20 days, and the relatively highly organized cortex of the new-born cat, 63 days. (The

*Langworthy² delimited several sub-areas in the motor cortex of the new-born cat. The cortex here described is most similar to his area B. But as to the structure of the individual cell, it is certainly more immature. I attribute this difference in maturity to the fact that Langworthy's specimen was 22 hours old, whereas my specimen was only half a day old (its crown-rump length was 130 mm., its body weight 117.5 grams, the ordinary crown-rump length of kittens at the time of birth being 150 mm.). That a relatively insignificant difference in age may determine a marked difference in cellular structure in new-born mammals, especially in those born with a very immature brain, had been shown by my studies of the cortical cells in new-born bears³, one and three days old.

human infant is born with a still more developed cerebral cortex⁵; it needs 280 days for its formation). This leads to the conclusion that *the degree of maturity the mammalian cortex may reach at the time of birth in various species is not in proportion to the time of gestation*. Furthermore, one would perhaps be inclined to correlate the developmental stage of the cortex and the rapidity with which a given cortical structure is reached in a given species, with the length of infancy this species has to expect. The latter, however, being unknown (with exception of man and perhaps the anthropoids), we can only use the length of life. So that at the time of birth the most immature cortex should be encountered in a species in which the duration of life will be rather long, thus giving to the individual a long opportunity of post natal maturation. To a certain degree this holds true for the bear, the duration of life of which is about 19 years. But the duration of life of the rat is only 2 to 3 years, while that of the cat, which has the most ripened cortical structure of our series, is only about 13 years. This leads to the conclusion that *the degree of maturity which the mammalian cortex attains at the time of birth in various species is not in proportion to the life span of the species*.

INTERPRETATION IN THE LIGHT OF FUNCTION

No extra-uterine existence is possible without the actualization of the vital functions, such as respiration, independent circulation, thermoregulation, metabolism, secretion, digestion, excretion, sucking, swallowing, alternate rhythm of sleep and waking, etc. It is generally believed that these functions require only lower levels of the central nervous system.* But a dog deprived of its spinal cord may not only survive (provided the spinal segments necessary for respiration are spared), but it also regains its thermoregulation and an arterial pressure near to normal values.⁶ These facts** strongly indicate

that for the accomplishment of vegetative functions the integrity of peripheral (and sympathetic) structures may be sufficient. Motion and sensation are the two elementary and fundamental functions related to the central nervous system. There is no doubt that *motion and locomotion* exist in a new-born mammal; as a matter of fact, they exist already at a much earlier stage of development. Besides righting reactions and postural tonus, the outstanding motor and locomotor pattern in a new-born mammal is what Tilney called the crawling-approach reaction,⁷ comprising side to side movements of the head, alternate movements of the fore-limbs and synchronous (propelling) movements of the hind limbs as its essential elements. I saw this reaction in the new-born bear, the cortex of which is definitely embryonic in character. Langworthy⁸ saw it even in the "new-born" opossum, the central nervous system of which is probably still more immature. Sensation can only be judged by the reaction an animal shows to stimulation. The new-born mammals here considered have their eyes closed and thus visual stimuli can not be effective. There is no definite evidence that touch, hearing, or smell provoke reactions. Sucking, however, presupposes some oral sensibility. There is a definite reaction to pain, the new-born mammals uttering plaintive cries and performing definite motor reactions on compression of the tail. It seems to me that *the cry of the new-born mammal* is one of its most impressive behaviors. The cry is often intense, becoming more vigorous with every hour, but it has a tone entirely different from the cries of later, especially adult stages. According to my observations the cries uttered by very different species at the time of birth may even be very similar to one another. Brown-Sequard⁹ was not convinced that the existence of cries prove that there is a perception of pain, unless it is admitted that the medulla oblongata is also a center for these perceptions; he observed cries to cease only after removal of the medulla oblongata in cats, rabbits, and guinea-pigs. Although in some instances, crying may well be a pure reflex action (due to the contraction of the expiratory muscles and that of the tensor muscles of the glottis), it seems to me difficult to deny that crying is indicative of a perception of pain in those

*Brown-Sequard⁹ found that even after the ablation of both the brain and the cerebellum, new-born rabbits are able to suck very well; "which is a proof that sucking may be executed by reflex action".

**Similar experiments had been made many years ago by F. Goltz. But again, I must quote Brown-Sequard⁹. He was the first one to destroy successfully the spinal cord and to keep the animals alive. His experiments have been completely forgotten. Nevertheless, they are of particular interest being performed in *young* animals the age of which was known. Brown-Sequard observed urinary secretion after complete destruction of the spinal cord from the eleventh or twelfth costal vertebra to its termination in a nearly three months old cat, thus proving that urinary secretion is not under the dependence of the

spinal cord. Concerning the influence of the spinal cord on the functions of organic life, his observations are still unique, showing that not only thermoregulation but also growth, nutritive reparation, secretion of hair and nails appeared to exist without any apparent disturbance.

instances in which there is an intense and immediate crying on painful stimulation, or an increase in intensity of cries already uttered spontaneously, particularly when associated with other (motor) reactions. Goltz¹⁰ did not hesitate to interpret the various utterances of mammals deprived of their brains as definite manifestations of corresponding sensa-

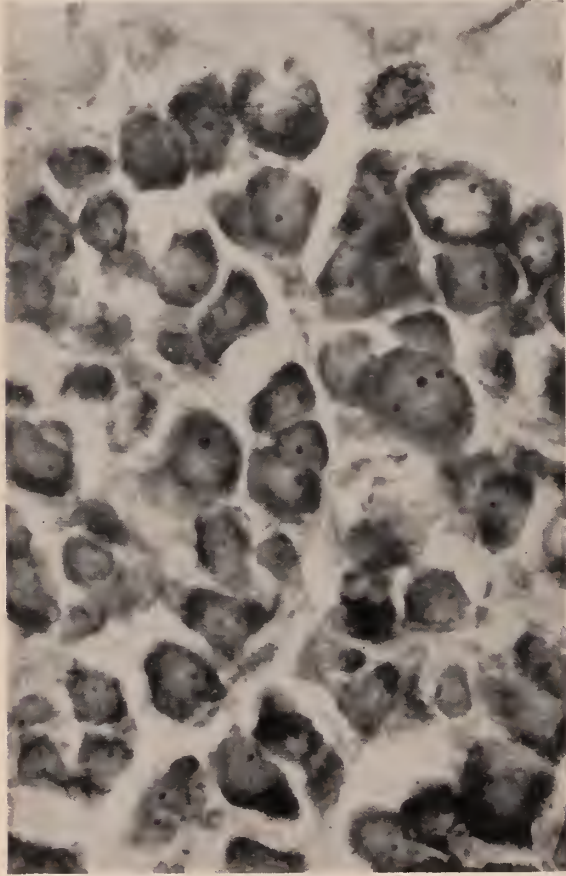


Fig. 5. Nissl x 865.
Spinal ganglion of the new-born rat.

tions and feelings. I am therefore convinced that *there is sensation of pain in the new-born mammal*, although this sensation may differ in nature from what is called protopathic sensibility in an adult animal.

It results from our investigations that *motion and sensation such as are seen in a new-born mammal are not in proportion to the degree of maturity the cortex shows in different species at the time of birth*. This holds true particularly for the "crawling approach reaction" which seems to be a locomotor behavior, common to various (perhaps to all) mammalian species regardless of the developmental stage

their cortex has reached at the time of birth. But the problem is whether the immature cortex participates or not in those motor and sensory functions. Here our statements can only be hypothetical in character. It is generally admitted that initiating, controlling, guiding, individualization and refinement of voluntary movements are the cortical elements of motion in an adult individual. It would hardly be possible to detect them in the motor behavior of a new-born mammal. From a review of previous investigations dealing with the electrical stimulation of the cortex of new-born dogs, cats, and guinea-pigs I draw the conclusion that, generally speaking, *in these species the cortex is already a functioning motor organ but that its stimulation does not yield the proper cortical element of motion at the time of birth*. In this respect the experiments of Michailow¹¹ are the most instructive ones. On electrical stimulation of various points of the cortex of new-born dogs, only a generalized and massive motor response could be elicited by this author, whereas stimulation of the cortex of the adult animal yields particularized, differentiated and isolated movements. The cortex of the new-born bear had never been stimulated. The most immature cortical structure ever explored electrically is that of a 23 day old pouch-young opossum, having a crown-rump length of only 33 mm.¹² Movements of the contralateral forelegs were obtained, the predominating feature being an extensor thrust of the whole leg with outspreading of the toes. At this time the cortex appears so immature as to cyto-architecture and structure of the individual cell that the author concludes: "It seems difficult to correlate the histological picture with the physiological response". Nothing is known about the excitability of the cortex of the new-born opossum and no data are available as yet as to the cortical structure of this species at the time of birth. According to the investigations of Langworthy,² movements of the contralateral fore-legs can be elicited in new-born cats. But refinements of movements can only be seen in adult cats; let us remember that the cortical structure of the new-born cat is relatively mature.

The part played by the cortex in sensation is concerned with those physiological processes which underlie projection and discrimination (appreciation of relationships in space, appropriate reactions to stimuli of different intensities and recognition of the

similarity in test objects of various weights and "localizing responses" were noted in fetal rats of sensation in the new-born mammals here considered can only be guessed. However, changes in so-called "localizing responses" were noted in fetal rats of different and increasing gestation age when selected cutaneous areas were systematically stimulated.¹⁴ As the normal birth time approached, greater specificity of response in relation to cutaneous stimulation was found in (1) the particularized movement of the member stimulated, (2) the movement of local muscles under the point stimulated, (3) the movement of a limb so as to touch the point stimulated.

Our study is based primarily on cyto-architecture and individual cell structure. The nervous system of the new-born mammals here considered contains no nerve cells having all of the characters of mature ganglion cells. The most immature elements were found in the cerebral cortex. As a matter of fact, we have no *objective* criteria according to which a given developmental stage of the nerve cell can be considered as already functioning and *only by arbitrary decision can a level be determined in the nervous system of the new-born mammal beyond which there is no more functioning of the constituent cell units of this organ.* In the new-born rat, neither the anterior horn cells of the spinal cord, nor those of the spinal ganglia or of the ganglia of the cranial nerves, have reached their full maturity (fig. 5). Since there are no criteria of functioning of unripened nerve cells, one might believe that this nervous system is non-functional on the ground of the immaturity of all of its constituent elements. However, I would rather consider that this immature nervous system is functioning *in its entirety*, even though we know nothing about the way in which it may function—but do we have any more knowledge about the functioning of the adult nervous system? To consider it as a functioning whole rather than exclude some of its parts (such as the cortex) from functioning, fits indeed best with the principle of integration¹⁵ according to which *each part of a living organism participates and cooperates in the vital manifestations of the whole. There can be no functionless element in a living whole.*

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PELVIC PAIN: ITS ANATOMICAL AND SURGICAL ASPECTS IN GYNECOLOGY*

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Pain is a part of a protective physiologic mechanism, and, as such, is desirable. However, at times pain may become no longer protective, and, indeed, may become destructive. Such pain more urgently demands relief. Ideally, the relief of pain would be brought about by the removal of the pain-producing factor. However, there are cases in which the cause of the pain is not known and, therefore, cannot be directly attacked. There are also cases in which the causative lesion is known but cannot be removed. Furthermore, there are cases in which the removal of the causative lesion at the periphery would violate the principle that the treatment of a condition should not be a greater hazard or cause a greater loss than the condition itself. Under certain of the above circumstances, the treatment of choice may be the interruption of the anatomical pathways over which the pain-producing impulses pass.

Pelvic pain, that is, pain in the lower abdomen, lower back and perineum, is a common complaint of women, though much of the pain distributed within this area does not have its origin in the female genital organs, and many patients with serious diseases of the female genitalia have no pelvic pain whatever. This paper is concerned only with that pain which has its origin within the female internal generative organs. It is not concerned with pain of somatic origin which may be associated with pelvic disease. It is concerned specifically with the anatomical routes over which the pain-producing impulses travel, with the areas of distribution of the referred pain, and with symptomatic relief by the surgical interruption of the painful impulses. It is not concerned, because of limitation of time, with the interesting subject of the mechanism of origin of the pain. Neither is it concerned with the medical relief of pain as opposed to its surgical relief, or with the relief of pain by the cure or removal of a lesion.

Accurate anatomical and physiologic knowledge is more than germane to this subject, yet much re-

mains to be learned concerning the innervation of the internal female genitalia. The anatomy and physiology described in the subsequent paragraphs are believed to represent the best information available at the present time.

UTERUS

All of the internal genitalia are supplied by the autonomic nervous system. The sensory nerves of the uterine *body* reach the central nervous system solely by the sympathetic division of the autonomic system. The sensory fibers run from the uterus to the pelvic plexuses. The latter are situated one on each side of the rectum, cervix, and upper portion of the vagina. From the pelvic plexuses, viscerosensory fibers pass upward to join the superior hypogastric plexus. The bundles of communication between the pelvic plexuses below, and the superior hypogastric plexus above, are sometimes called the inferior hypogastric nerves. The superior hypogastric plexus, often misnamed the presacral nerve, lies retroperitoneally in front of the fifth lumbar vertebra in the interiliac trigone. Fibers from this plexus pass upward over the aortic bifurcation to join the preaortic pelvic plexuses. Sensory fibers from the uterus, following the route described, reach the spinal cord through the posterior roots at the eleventh and twelfth thoracic segments. Though the sacral autonomies communicate with the pelvic plexuses, available evidence suggests that no sensory connection exists between the sacral nerves and the body of the uterus.

Visceral pain is believed to be referred to the areas of distribution of the somatic nerves which reach the spinal cord at the same segment or segments as do the viscerosensory fibers from the organs involved. Accordingly, pain of uterine origin should be referred to those somatic areas supplied by the eleventh and twelfth thoracic nerves. Therefore, the pain would be referred anteriorly to the lower abdominal wall (fig. 1) and posteriorly to the lower lumbar region (fig. 4), inasmuch as the

*Read before the annual meeting of the Medical Society of Virginia at Roanoke, October 26, 1943.

dermatomes of the eleventh and twelfth thoracic nerves are so located.

If pain is not relieved by the removal at the periphery of the agent responsible for the pain, it can be attacked proximally in the nervous system at one of several levels. Thus, theoretically, the removal of an appropriate part of the sensory cortex would be a method of pain relief, a method most cen-

former method, in the case of uterine pain, would be applied to the eleventh and twelfth thoracic roots and would seem indicated only in inoperable malignant disease, if at all. Valid objections to it are the coincident somatic effects and its occasional failure to give relief. Subarachnoid alcoholic injection is a simple procedure aimed at affecting the less protected pain fibers in the posterior roots. This

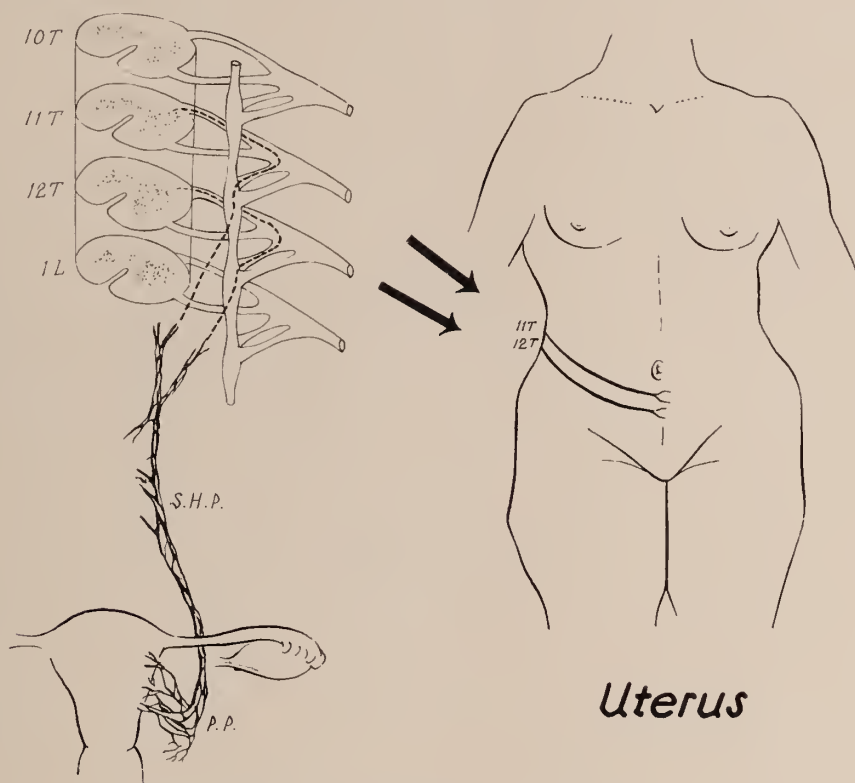


Fig. 1.
Innervation of uterus and distribution of referred pain.
P. P. = Pelvic Plexus.
S. H. P. = Superior Hypogastric Plexus.

trally applied. A lower level of intervention, and one indicated in certain cases of inoperable malignant neoplastic disease, lies in the spinal cord. Here, in the operation known as chordotomy, selective division of the spinothalamic tracts is performed at the proper level. In the case of uterine pain such a level is several segments above the eleventh and twelfth thoracic segments. This procedure is contraindicated in benign conditions, partly because of untoward effects which may result from the operation.

Another site of attack is at the posterior nerve root. The roots may be cut or may be treated by subarachnoid alcohol injection. Theoretically, the

procedure is best limited to cases of hopeless malignant disease, because of the danger of serious untoward results.

The above procedures have limited application. They are best performed by the neurosurgeon. An attack at the level of the autonomic nervous system is the most practicable and desirable surgical method of relieving uterine pain, and it falls within the spheres of the properly trained gynecologist and general surgeon. The operation par excellence, in the case of uterine pain, is the resection of the superior hypogastric plexus. In this structure there is concentrated into an accessible area all of the sensory fibers of the uterine body. Furthermore, the opera-

tion is almost always successful in properly selected cases, and there seem to be no untoward effects. The chief indication for this operation is primary uterine dysmenorrhea. The risk in trained hands is no greater, and probably less, than that of an average major abdominal operation.

Alcoholic injection of the pelvic plexuses per vaginam for the relief of dysmenorrhea has been performed with a reported cure rate of fifty per cent. Because of the apparent uncertainty of the results

nervation of the cervix is at least in part through the sacral parasympathetics. Pain on the stretching of the cervix during childbirth after superior hypogastric plexus resection has been recorded. The writer has noted repeatedly that the cervix retains pain-sensitivity after the same operation. It follows that therapy aimed at the neurosurgical relief of cervical pain must be in part directed at the sacral parasympathetics, or at the pelvic plexuses which receive the parasympathetics, or be directed more cen-

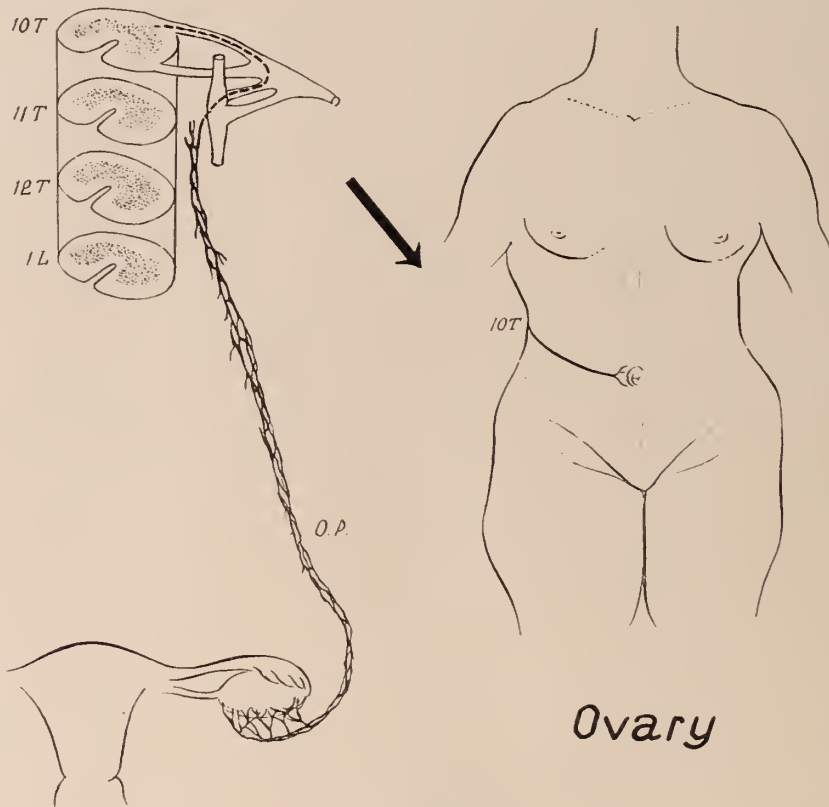


Fig. 2.
Innervation of ovary and distribution of referred pain.
O. P. = Ovarian Plexus.

and the risk of undesirable injuries, this blind procedure does not appeal to this writer, inexperienced in its use.

Temporary relief from uterine pain can be brought about by spinal anesthesia or by caudal injection. The latter, in the form of a continuous anesthesia, is now being publicized for use in labor cases especially. In such procedures the anesthetic must reach the level of the eleventh and twelfth thoracic segments to block pain impulses from the uterine body.

CERVIX

There is evidence to show that the sensory in-

trally, as within the spinal canal. Interference with the superior hypogastric plexus alone would not suffice.

OVARY

Sensory fibers from the ovaries do not pass through the superior hypogastric plexus. They pass upward along the ovarian vessels to levels at least above the inferior mesenteric and lower preaortic plexuses, and enter the spinal cord at the level of the tenth thoracic segment. Thus, theoretically, ovarian pain referred to the abdomen would be at the level of the umbilicus (fig. 2).

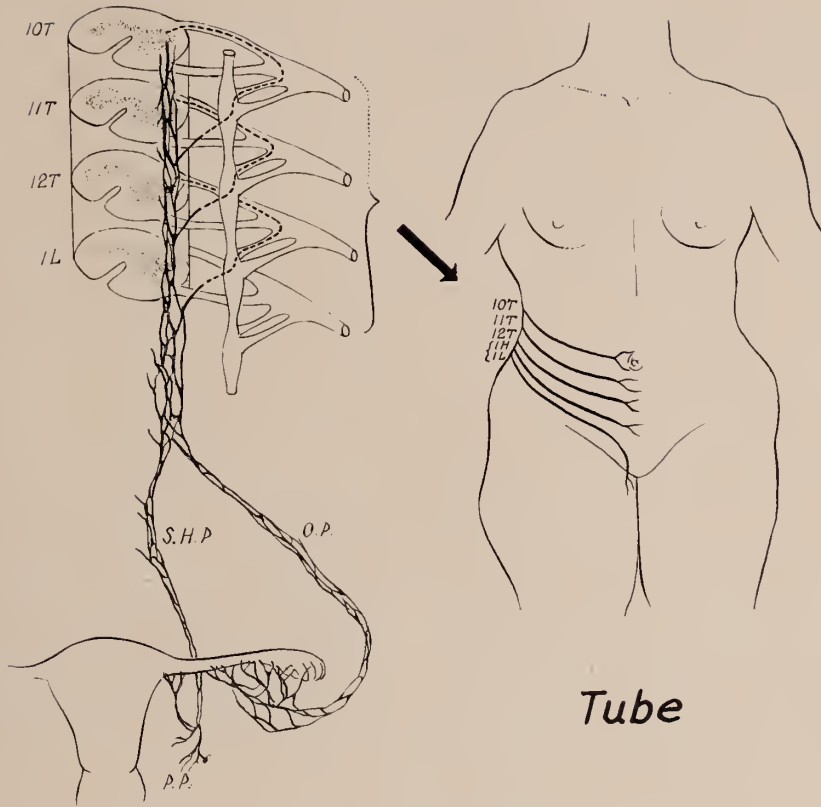


Fig. 3.
Innervation of Fallopian tube and area of distribution of referred pain.
P. P. = Pelvic Plexus.
S. H. P. = Superior Hypogastric Plexus.
O. P. = Ovarian Plexus.

The relief of ovarian pain could be brought about by procedures similar to those described in the discussion of the uterus. The most notable exception, however, is that resection of the superior hypogastric plexus would not affect ovarian pain. However, ovarian pain could be abolished by the resection of the ovarian plexus as it courses along the ovarian vessels. This operation has been performed, but in ovarian disease the indication for sympathectomy is not so clear as in the case of uterine pain, and there is some danger of injury to the ovarian blood supply with resulting undesirable effects on ovarian function. At the present time there seems to be little place for this operation.

UTERINE TUBES

The uterine tubes have a dual sensory supply. The portion of the tube nearest the uterus sends fibers through the superior hypogastric plexus. The remainder and larger portion sends fibers along the ovarian plexus. These sensory fibers are believed to reach the spinal cord at the eleventh and twelfth

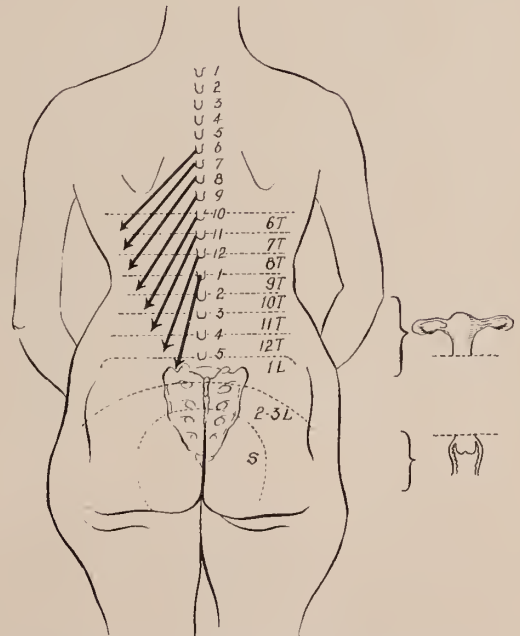


Fig. 4.
Diagrammatic representation of marked descent of sensory nerves from spine to skin, showing separate areas of distribution of referred back pain from tubes, ovaries, body of uterus, and from cervix.

thoracic, the first lumbar, and possibly the tenth thoracic levels. Referred pain would be within an area representing the sum of the areas of uterine and ovarian pain plus the areas covered by the distribution of the first lumbar nerve (figs. 3 and 4). The neurosurgical relief of tubal pain would seem rarely, if ever, indicated. If such relief is indicated, the statements made in the preceding sections on the uterus and ovaries would apply with appropriate and obvious modifications.

The external genitalia are not included in this discussion.

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When Thou Examinest a Woman

Who has lived many years without her menstruation having appeared; she vomits something like foam and her body is as though a fire were under it, but she recovers after the vomiting; then say thou to her: This is a rising of blood to the womb. So soon as she has spoken the Magic Formula, and has had coitus, make thou for her:

Berry-of-the-uan-tree	1/32
Caraway	1/64
Incense	1/64
Uah-grain	1/16

Put cow's milk to the fire with thigh-tallow. Add milk thereto and let her take for four days.

Remedy to Allow the Womb of a Woman to Slip Into Its Place:

The-film-of-dampness-which-is-found-on-the-wood-of-ships

Rub in yeast-of-fermented-beer and let her drink it.

ANOTHER:

Put an ibis-of-wax on the coals and allow the fumes thereof to penetrate into her sex-organs.

ANOTHER:

Oil-of-the-earth (petroleum?) with peddu (manure)

Keep in honey and rub the body of a woman therewith.

The Papyrus Ebers, 1500 B.C.

ANENCEPHALY WITH ANTENATAL ROENTGEN DIAGNOSIS IN THREE CASES

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According to Broder,¹ anencephaly, a not infrequent malformation of the nervous system, is characterized by the absence of both cerebral hemispheres and usually a dark red mass of vascular tissue replaces the calvarium. In April, 1916, Hartung,² in discussing congenital anomalies and variations of the bony skeleton as revealed by the x-ray, said, "we have diagnosed one case of anencephalus in this way." Case,³ in September, 1916, reported a case of anencephaly successfully diagnosed before birth and pointed out that, "the rounded shape of the head is conspicuously absent; even in plates which show distinctly the spinal bones, the bones of the base of the skull, and the face." He had apparently thoroughly reviewed American, British, German, French, Central European and Scandinavian literature in 38 references included in his published paper, without finding cases with antenatal roentgen diagnosis of anencephaly preceding his. Since 1916, the literature mentioned above, plus Italian, Russian, Chinese, Indian, Japanese, South and Central American, and African papers contain scattered reports of anencephaly, many not readily available for review. Accessible roentgen reports have been made by Beath,⁴ Case,³ Case and Cooper,⁴ Doub,⁵ Grunspan-De Brancas,⁶ Harris,⁷ Hartung,² Hunter,⁸ Jennings,⁹ Maier,¹⁰ Matthews,¹¹ Spangler,¹² Stevens,¹³ Tracy,¹⁴ Yamaguchi,¹⁵ and others.

The pathology of the endocrine glands associated with anencephaly has been discussed especially by Angevine,¹⁶ Barlow,¹⁷ Broder,¹ Browne,¹⁸ and Chin.¹⁹ The more recent anatomic and embryologic aspects have been studied by Bean,²⁰ Bloom,²¹ Buxbaum and Wachsman,²² Harbeson,²³ Josephson and Waller,²⁴ Lloyd,²⁵ Marcus and Nickman,²⁶ Nanas,²⁷ Stockard,²⁸ Stroer and van der Zwan,²⁹ Thompson,³⁰ Thoms,³¹ and Von Recklinghausen.³²

Throughout the literature there seems to be general agreement that whenever hydramnios is suspected clinically, a fetal monstrosity should be con-

sidered. Anencephaly is considered a monstrosity which can be diagnosed by adequate anteroposterior and lateral roentgenograms during the latter half of pregnancy.

A review of the obstetrical records at the Medical College of Virginia Hospitals for a period of ten years, 1933 to 1942, inclusive, revealed 71 cases with polyhydramnios. Of these, gross deformity



Fig. 1. Case 49522. Lateral film with antenatal diagnosis of anencephaly.

of the fetus was noted in 7 (9.8 per cent). Three were fetal monstrosities, 3 had erythroblastosis of the hydrops variety, and 1 infant had clubbed feet. One of these monstrosities was diagnosed before delivery by x-ray.

During the first six months of 1943, following the above period of study, a diagnosis of anencephaly was made before delivery in 2 patients who had roentgenograms made of the abdomen because of polyhydramnios.

M. C. V. CASE No. 49522: A 33 year old white primigravida, 26 weeks pregnant, was admitted to Memorial Hospital February 18, 1938, with pregnancy complicated by toxemia and polyhydramnios. Her blood pressure was 140 systolic and 100 diastolic. The uterine fundus measured 35 centimeters

pital on February 4, 1943, because of a uterine pregnancy of twenty-eight weeks, complicated by polyhydramnios. She was gravida 5, para 2, abortions 2. Blood pressure was 120 systolic and 70 diastolic. The uterine fundus measured 47 centimeters above the symphysis. No fetal heart sounds were heard. She complained of dyspnea and abdominal discomfort from pressure of enlarged uterus.



Fig. 2. Case A-18787. Anteroposterior film with antenatal Roentgen diagnosis of anencephaly.

above the symphysis. No fetal heart sounds were heard. X-ray examination on the day of admission showed no definite skull vault, suggesting anencephaly.

Labor started the following day with spontaneous rupture of membranes. A stillborn anencephalic monster weighing 2 pounds 7 ounces was delivered after only twenty minutes of labor. Postpartum course was uneventful.

M. C. V. CASE No. A-18787: A 24 year old colored multipara was admitted to St. Philip Hos-



Fig. 3. Case A-20762. Lateral film with antenatal Roentgen diagnosis of anencephaly.

X-ray studies at the time of admission to the hospital showed a single fetus with anencephaly.

On the morning of February 6, two days after admission, a sterile vaginal examination revealed the cervix to be soft, and 3 cm. dilated. The membranes were ruptured artificially and a little over 7000 cc. of amniotic fluid was allowed to escape slowly. Eight hours later, she delivered spontaneously a stillborn anencephalic monster.

Her postpartum course was complicated by endometritis with low grade septic temperature to 101F. for five days. She was found to be a mild diabetic. Blood sugar was 122 mg. per 100 cc. on admission. At one time during the septic period, the blood sugar was as high as 244 mg.

Her convalescence was otherwise uneventful and she was discharged from the hospital on February 21, 1943.

M. C. V. CASE NO. A-20762: A 36 year old white multipara was admitted to Medical College Hospital on March 16, 1943, because of a uterine pregnancy, near term, complicated by polyhydramnios. She was gravida 4, para 3, abortions 0. Her estimated date of confinement was March 17, 1943. The prenatal course had been uneventful. Hemoglobin was 60 per cent. Blood pressure was normal. The uterine fundus measured 33 cm. above the symphysis.

X-ray examination on the day after admission showed a single anencephalic fetus. On the afternoon of admission, a sterile vaginal examination showed the cervix to be 2 to 3 cm. dilated. The membranes were ruptured artificially and approximately 3000 cc. of amniotic fluid was allowed to escape slowly.

Labor started soon thereafter and she delivered spontaneously a stillborn anencephalic fetus after five hours of labor. Her postpartum course was uneventful.

SUMMARY AND CONCLUSIONS

The ante-partum diagnosis of anencephaly by x-ray in three cases has been reported.

Routine roentgen examination of the abdomen in all cases of polyhydramnios is advisable.

If a monstrosity is found, it is best to keep the mother in ignorance of the fact and interrupt the pregnancy. The mother can be spared a long pregnancy and futile expectancy of a normal child.

The small quantity of roentgen radiation necessary for the examination, less than 1/50 of an erythema dose, according to Tracy,¹⁴ is not considered dangerous for mother or fetus. Our own measurements with a Victoreen instrument showed 5r in the anteroposterior exposure and 8.5r in the lateral exposure, as measured on the skin, a total quantity of 13.5r.

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DORMITORY, CLINIC, AND HOSPITAL.

CHRONIC OSTEOMYELITIS OF THE PETROUS PYRAMID WITH EXTENSIVE EXTRADURAL ABSCESS AND SPONTANEOUS DECOMPRESSION*

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Clinically, lesions of the petrous portion of the temporal bone are prone to occur without evidence of the cardinal symptoms and signs of a diseased petrous pyramid. Lillie and Williams¹ have pointed out that no limited and rigid symptom complex fulfills all the requirements for the establishment of a diagnosis of a petrous bone lesion. The following case report illustrates such an instance.

Prior to the 19th century, lesions of the petrous bone aroused interest, for the most part, by the description of the pathologic changes encountered at autopsy. In 1904 Grandenigo² presented a triad of symptoms: otorrhea, pain in the trigeminal nerve distribution and abducens nerve paralysis which stimulated interest in the clinical recognition of the lesion responsible for the syndrome. The greatest advance in the recognition and management of suppurative lesions of the petrous pyramid has been made since 1930 by the contributions of Kopetsky,³ Almour,³ Eagleton,³ Lillie and Williams,¹ Ramadier,³ Lempert,⁴ and Moorehead.⁵

The temporal bone consists of the squamous, the petromastoid and the tympanic portions. There are three types of bone structure found: the pneumatized, the diploic and the sclerosed bone. Mixtures of these types may occur.

The temporal bone consists of the squamous, the more often diploic than pneumatic. The temporal bones of some adults never pneumatize and remain diploic. The petrous portion of the temporal bone is the area most prone to remain diploic. Should an infection occur in the petrous portion of the temporal bone one of two clinical entities may result: (1) petrositis or osteitis which occurs in pneumatized temporal bone, and (2) osteomyelitis which occurs in bone containing marrow.

Bast and Forester⁶ studied serial sections of 39

temporal bones of 27 infants ranging from full term to 6 years, and 97 temporal bones of 69 fetuses, ranging in age from 8 weeks to term. They were unable to demonstrate air cells in the petrous apex that were not connected with other cells of the petrous bone. They concluded that there is no direct relation between air cells and bone marrow. Air cells do not invade bone marrow directly. When air cells extend into diploic bone, the cells of the bone marrow disappear, and the connective tissue becomes less dense than prior to the invasion of the air cells. When the formation of air cells is complete, the cells are separated from the bone marrow by a plate of bone or by dense connective septums.

CASE REPORT

The patient, a white married woman, aged 26 years, was admitted to the Medical College of Virginia Hospital, February 6, 1942, because of a discharging sinus of the left occipital region of seven months' duration, and headache on the left side for three years.

Three years before admission (1939), she had developed purulent otitis media on the left following an attack of acute coryza. Two weeks later, she noticed left malar pain and headache involving the left side of the head. The headache and malar pain seemed to be more severe whenever the aural discharge decreased or stopped temporarily. Although sinusitis was considered, none was demonstrated as a possible cause of the pain. Six months after the onset of the otitis media, she awoke one morning with marked vertigo which remained for approximately six weeks. The attack necessitated bed rest as she could not walk because of it. The attack of vertigo was also associated with marked left malar pain, but without diplopia, vomiting or cervical rigidity. She did not recall the degree of diminished hearing during this period because she felt that the ear discharge and cotton plug in the

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ear contributed to total deafness on the diseased side.

She recovered from the attack of vertigo and was ambulatory for over two years. During this period she continued to have headache and malar pain which was definitely related to the amount of ear discharge; the less discharge, the more pain.

In March, 1941, she again developed severe vertigo requiring complete bed rest for a period of two weeks. In April, 1941, a complete mastoidectomy was performed on the left side at another hospital. Aural discharge and wound drainage had diminished at the end of six weeks. One week later or at the end of seven weeks after mastoidectomy, a painful swelling of the scalp appeared in the left occipital region. This was incised and pus was released. The purulent discharge lasted for a week. The occipital swelling recurred on cessation of the discharge. It was necessary to incise and drain the abscess that formed over the occipital region on seven occasions during the year following its onset. The headache and malar pain persisted. Tinnitus and deafness on the left side were constant, but she had no vertigo or feeling of unsteadiness.

The patient's past history was otherwise non-contributory. An attempt to determine the amount of sulfonamides taken by the patient during the three years was unsuccessful, as she did not know about this, in as much as a number of physicians had prescribed treatment.

Physical examination revealed a well nourished and very apprehensive female. The positive physical findings were limited to the head and were as follows: There was a small opening in the scalp of the left occipital region 2 mm. in diameter from which a drop of pus could be expressed. A linear vertical scar measuring 2 cm. in length on each side of the opening could be identified under old dried discharge and matted hair. A healed post-auricular mastoidectomy incision scar was present on the left side. The left tympanic membrane was thickened and showed absence of light reflex, but was intact and there was no discharge from either ear.

Audiometric studies disclosed normal hearing on the right side and total air and bone conduction deafness on the left. Tests of vestibular function resulted in a normal reaction on the right, but the left labyrinth showed no reaction to either ice water or hot water.

The remainder of the physical examination, including a study of the ocular fundi and neurologic examinations, was essentially normal.

The laboratory data on admission, February 6, 1942, including an analysis of the urine, was within normal limits. The blood Wassermann reaction for syphilis was negative.

Roentgenograms of the skull were not unusual except that the left lambdoidal suture was very prominent on comparison with the right, and there was a separation between the occipital and parietal bones on the left side, about 4 mm. in width and 2.5 cm. in length (fig. 1). Films taken in the Towne posi-



Fig. 1. Roentgenogram February 6, 1942. The lambdoidal suture on the left is abnormally wide as compared with the right side. Through this hiatus, pus escaped extracranially, thus affording a valuable partial decompression of the abscess before operation.

tion, and of the base of the skull, showed some erosion of the petrous ridge of the left temporal bone around the internal auditory meatus. There was marked clouding of the cells and the cell walls were poorly defined. There was definite roentgenologic evidence of osteomyelitis of the bone in the left petrous ridge.

Course in Hospital. On admission, the oral temperature was 99 F., the pulse rate 100 per minute, respiration 24 per minute, and the blood pressure 120/70. The patient was observed for three days during which time the oral temperature did not rise above 99 F.

Operation. On February 9, 1942, the region of the draining sinus in the left occipital region was explored. The sinus tract in the scalp was excised in toto and a vertical incision was made through the scalp in line with the scar of previous operations. The incision was then extended in an elliptical manner around to the left mastoid region and extended anteriorly to expose the left temporal region. The sinus tract was found to lead between the occipital and parietal bones to granulations over the dura covering the left cerebellar hemisphere and temporal lobe.

It was necessary to remove the bone over the left cerebellar hemisphere and the sinus tract, from which pus flowed to the extent of 8 to 10 cc. Granulations 3 and 4 mm. in thickness and bathed in pus, overlay the cerebellar and parietal dura. The tract was followed down to the anterior petrous surface for 2 cm. medially. The posterior petrous ridge was inspected and sclerotic bone covered with thick granulations and pus was found. The exploration of the petrous bone was terminated when the internal auditory meatus (from which pus exuded) was located. Rubber drains were then placed down to the internal auditory meatus and to the occipital dura and brought out at various points along the scalp incision. The scalp wound was closed with interrupted sutures.

Culture of the pus removed from the extra-dural space showed the presence of *Streptococcus hemolyticus*. Postoperative convalescence was uneventful, and the patient was discharged at the end of two weeks. There was a small amount of discharge from the occipital wound which required daily dressings. The patient was no longer disturbed by left-sided headache or left malar pain. After her dismissal from the hospital, she was observed from time to time for a period of three months. During this period, there was a small amount of continuous drainage from the posterior wound which, when cultured at various intervals, was found to contain *Streptococcus hemolyticus* on one occasion, diphtheroids on a second occasion and *Staphylococcus aureus* in the third and fourth specimens of pus.

Roentgenograms in May, 1942, showed well advanced osteomyelitic sequestrums and sclerosis of the entire petrous bone on the left side (fig. 2).

Second Operation. On May 15, 1942, using the classical post-auricular incision for mastoidectomy, the previously operated (April, 1941) mastoid cavity was exposed. A sufficient amount of bone was then removed to allow separation of the dura from



Fig. 2. Roentgenogram May, 1942. The skull defect from the operation February 9, 1942 is readily identified. The left petrous ridge is irregular and diseased bone may be noted.

the posterior petrous surface leading to the internal auditory meatus. There was a very fibrous tract leading from the external scalp wound, at the site of our previous operation, to the internal auditory meatus. The entire outer plate of the mastoid and mastoid process and the bony posterior auditory canal were then removed. Two large and several small pieces of sclerotic sequestered bone were carefully separated from their attachments to the soft tissues of the internal auditory canal with some difficulty. The vestibular and auditory portion of the eighth cranial nerve and the facial nerve were embedded in edematous granulation and inflammatory

tissue which extended from the porus acusticus. The semicircular canals were opened and found filled with gray inspissated pus and thickened membrane. The cochlear vestibule was found filled with liquid pus. The labyrinthectomy was completed after the manner described by Richards⁷ with modifications to suit the occasion (fig. 3).



Fig. 3. Roentgenogram October 28, 1942. Five months after sequestrectomy the remaining bone is very sclerotic and the edges are smooth.

The wound was sprayed with two grams of sulphanilamide powder, flat rubber drains were placed along the dural surface to the remainder of the petrous apex and external auditory canal, and the wound was closed with interrupted sutures. The patient's condition was considered good at the completion of the operation.

Postoperative Course. Sulphadiazine was given orally postoperatively for prophylactic purposes for five days and then discontinued. At the end of eighteen hours (second operation), the patient had completely awakened from the effects of the anesthetic, and no apparent weakness of the left facial muscles was present. The first signs of facial mus-

cle weakness on the left were evident at the end of twenty-four hours and facial paralysis on the left side was complete at the end of forty-eight hours. Except for the facial weakness, convalescence was uneventful, and she was discharged from the hospital on the twentieth post-operative day, at which time the post-auricular wound was completely healed. A small amount of drainage was evident from the region of the cochlea by way of the external canal.

The patient's progress has been followed at frequent intervals for the past eighteen months, in spite of traveling difficulties from a distant city. At present, her condition is one of excellent general health. The radical-mastoid and labyrinth cavity is epithelialized and dry except for a small granulation site where exudate and crusts accumulate so that cleansing is required at varying intervals. Headache is no longer present and residual tinnitus on the left is so slight that the patient is not disturbed by it. The facial muscle tone has shown return of function, estimated at 85 per cent or more, during this period.

SUMMARY

It is apparent that this case represents disease of the petrous pyramid without the typical signs and symptoms of petrositis as described by Gradenigo. At the time the patient was admitted to the Medical College of Virginia Hospital, there had been no discharge from the involved ear for six or seven months. There had been no lateral rectus muscle palsy at any time throughout the entire illness, and although at times she had severe left malar pain, she did not have the usual retro-ocular pain of petrositis.

An analysis of the case from its onset indicates the course of the infection was as follows: After the attack of otitis media on the left side, mastoiditis and involvement of the petrous bone developed. Concurrently an extradural abscess was probably contributing to the headache described. In support of this, we feel that it is worthwhile to call attention to a pertinent fact—namely, that whenever there appeared to be a temporary slowing up of the aural discharge, presumably due to temporary obstruction, the headache and malar pain became more pronounced. This fact would tend to suggest increased dural pressure from the extra-dural abscess. At the time of her first attack of vertigo, serous labyrinthitis must have occurred. We have no report on the state of hearing and the condition

of the static labyrinth following the attack, but the diagnosis is based on the assumption that to have the second attack of labyrinthitis two years later (there is no history of involvement of the opposite ear), the labyrinth could not have been completely destroyed by suppurative disease at the time of the first attack of vertigo.

Mastoidectomy was performed after the second attack of labyrinthitis. Upon cessation of discharge from the ear and mastoid wound, the abscess over the occiput developed. Subsequent events proved that the source of pus was the extradural abscess associated with chronic suppuration of the labyrinth and petrous pyramid. The point of least resistance for escape of the pus proved to be the lambdoidal suture, a most unusual site for spontaneous decompression of such an abscess (fig. 1). This was really a fortunate occurrence as it permitted escape of some of the pus extracranially, thus lessening the chance for possible meningo-encephalitis or brain abscess that would have occurred by extension of the pus into the subarachnoid space.

Upon removal of the extensive amount of thick granulation tissue overlying the dura and establishing adequate drainage for the pus, the headache and malar pain were completely relieved—a fact noted within the first three days following the first operation by us (February, 1942). The second operation (May, 1942) verified the diagnosis of a diseased labyrinth and osteomyelitis of the petrous pyramid, and permitted thorough eradication of the diseased bone.

The gradual delayed development of, and subsequent recovery from, the facial nerve paralysis, favor the edema theory as contributing to temporary loss of function of this nerve.

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DISCUSSION

DR. EMANUEL U. WALLERSTEIN, Richmond: Dr. Pastore has ably presented this interesting case.

It is not typical in that there was no retro-orbital or circumorbital pain which is characteristic. This serves to emphasize that in the diagnosis of petrositis we cannot rely on any one symptom.

As for roentgen examination, I believe a fair statement is that a positive x-ray does not necessarily mean operation; that is unless cavitation and demineralization are demonstrated. For in a number of cases a positive x-ray shadow is caused by congestion of the petrosal cells. The reverse is also true for, at times, a case presenting a negative x-ray may be operative.

In the localization of the lesion and consequent operative approach, a consideration of the anatomy is helpful. If we divide petrositis into two categories, viz; that anterior to the eminence of the superior semicircular canal and second, that posterior to this canal, we can be aided by the location of the discharge. I refer, of course, to those cases in which a mastoidectomy has been performed preliminary to the development or recognition of petrositis. In the anterior variety, there is usually a continuing discharge from the middle ear while in the posterior variety the middle ear is dry, but there is discharge from the mastoid wound.

Another point illustrated by this case is that there is no one surgical procedure in dealing with petrositis.

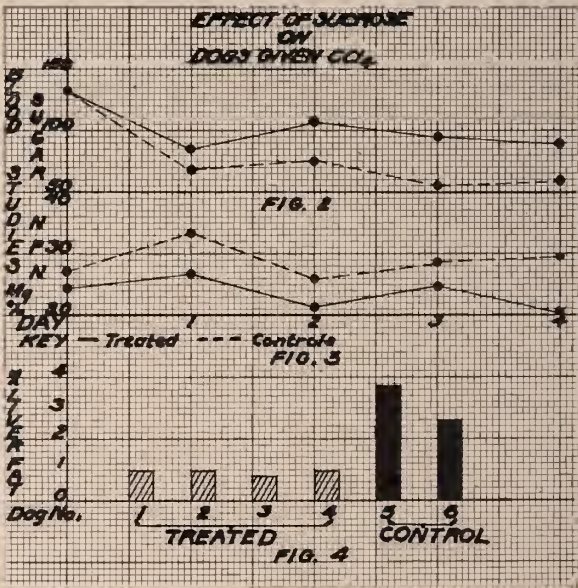
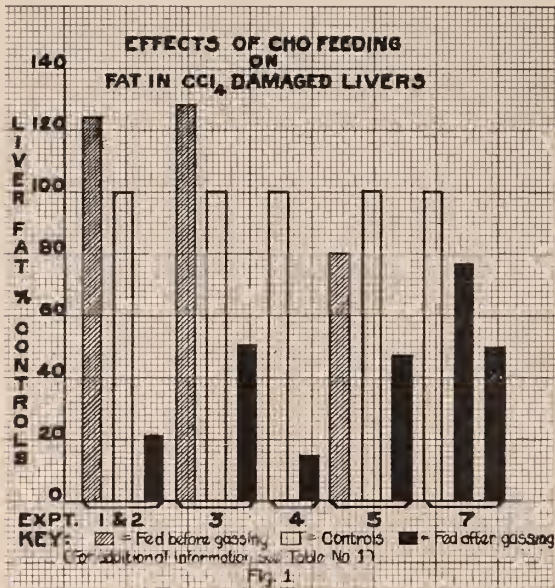
DR. FLETCHER WOODWARD, Charlottesville: Dr. Pastore is to be congratulated in the management of this case. The presence of the Staphylococcus aureus organism in any bone lesion demands the utmost respect. We are all aware of its slow, but persistent, continued presence once it gains a foothold.

EFFECT OF FOOD ON LIVER FAT OF ANIMALS FOLLOWING
CARBON TETRACHLORIDE POISONING

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and
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Opie and Alford¹ showed that animals fed a diet of oats and sugar were less susceptible to hepatic damage by chloroform poisoning than those fed either meat or fat. The latter was exceptionally bad. Graham² found that dogs given glucose one hour before chloroform anesthesia, again at the end of anesthesia and on the following day showed no liver necrosis and little increase in its neutral fat content, while control animals anesthetized at the same time showed fatty livers with marked necrosis. He believed that a high glycogen content of the

tion of a casein digest to starved dogs shortly before anesthesia may have made the animals slightly more resistant but the effect was not at all definite. These authors in another publication⁴ showed that liver regeneration following chloroform anesthesia took place more rapidly if the animals were on a high carbohydrate diet than if they were on a high protein diet. A mixed diet was probably superior to either. Moise and Smith⁵ concluded a high protein diet exerted greater protection than a high carbohydrate diet, while a high fat diet was detrimental.



livers of the treated animals was responsible for their protective state. Davis and Whipple³ obtained definite indications of protection against hepatic damage by chloroform from sucrose administration to dogs several hours prior to anesthesia. Glucose intravenously during anesthesia was of no benefit. Administration of casein or certain other foodstuffs such as kidney, brain and skim milk for several days prior to the anesthesia also was found to increase the animal's resistance. The administra-

Chandler and Chopra⁶ found the administration of sucrose several hours before anesthesia, with carbon tetrachloride, gave liver protection in cats but not in dogs. Davis⁷ found a diet of beans and rice efficacious against carbon tetrachloride poisoning. A mixed or a high protein diet was protective while a high fat diet markedly decreased the animal's resistance. Ravdin and his associates^{8,9} showed that, contrary to the generally accepted theory, the level of

liver glycogen at the time of anesthesia was not an important factor in the prevention of liver damage from chloroform administration. They concluded that the extent of liver damage following chloroform anesthesia of unstarved rats increased with increased concentration of liver lipids. Forbes, Leach and Outhouse,¹⁰ on the other hand, found that rats with fatty livers from a low-protein, low-choline, high-fat diet, after twenty-four hours starvation were but slightly more susceptible to carbon tetrachloride than normal rats starved for

and Whipple¹¹ found that dogs depleted of their protein stores by a low protein diet or by plasmapheresis were very susceptible to chloroform. The administration of a single large meat meal about thirty-six hours before anesthesia markedly increased the animal's resistance. Bollman¹² concluded that a high-carbohydrate, moderate-protein, low-fat diet afforded the greatest degree of protection against carbon tetrachloride, as evidence by the length of life of animals receiving repeated exposures to this poison.

TABLE 1
EFFECT OF CARBOHYDRATES ON THE NEUTRAL FAT CONTENT OF THE LIVER FOLLOWING
CARBON TETRACHLORIDE ADMINISTRATION

EXP. NUMBER	NUMBER OF RATS	AVERAGE BODY WT.	AVERAGE LIVER WT.	LIVER NEUTRAL FAT + CHOL.**	SUPPLEMENTS*
1-2	7	GM. 216	GM. 9.4	7.4 (6.1-10.)	Controls.
	3	225	10.4	8.6 (6.0-11.2)	50% sucrose solution 18, 15, 12, 9 hrs. and 10 min. before CCl ₄ .
	10	239	7.5	2.2 (0.7-3.6)	50% sucrose solution shortly after CCl ₄ and at 3 hr. intervals for a total of 5 doses.
3	4	225	8.4	8.0 (8.2-9.9)	Controls.
	4	208	8.9	8.9 (5.0-13.8)	40% sucrose solution 6 and 3 hrs. and 10 min. before CCl ₄ .
	4	208	8.0	5.9 (2.4-10.4)	40% sucrose solution as above, again shortly after CCl ₄ and at 2½ and 5 hr. intervals thereafter.
	4	198	7.5	4.0 (3.0-5.1)	40% sucrose solution shortly after CCl ₄ and at 2½ and 5 hrs. thereafter.
4	4	214	6.6	8.2 (5.0-10.0)	Controls.
	3	212	5.0	1.5 (1.5-1.6)	40% glucose solution shortly after CCl ₄ and at intervals of about 3 hrs. for a total of 5 doses.
5	7	139	6.8	7.9 (3.8-14.7)	Controls.
	7	137	6.8	6.2 (3.1-8.7)	40% glucose solution 6 and 3 hrs. and 10 min. before CCl ₄ .
	6	147	5.7	4.6 (2.2-6.9)	40% glucose solution shortly after CCl ₄ and at intervals of about 3 hrs. for a total of 3 doses.
6	4	174	7.3	8.8 (8.0-9.2)	Controls.
	4	168	6.1	4.6 (3.7-5.9)	30% glucose solution shortly after CCl ₄ and at 4 hr. intervals for a total of 5 doses.
	4	160	5.7	5.3 (4.2-5.9)	30% sucrose solution shortly after CCl ₄ and at 4 hr. intervals for a total of 5 doses.
7	4	189	8.0	3.9 (2.2-5.8)	Controls.
	4	178	7.1	4.3 (1.7-5.2)	20% glucose solution shortly after CCl ₄ and 3½ hr. intervals for a total of 5 doses.
	3	173	7.3	2.6 (2.0-3.8)	20% sucrose solution shortly after CCl ₄ and 3½ hr. intervals for a total of 5 doses.

*All supplements were given at a level of 1 cc. per 100 grams of body weight.

**Liver neutral fat plus cholesterol values are given as per cent wet weight. (Range given in parenthesis.)

the same period of time. However, the oral administration of fat shortly before the time of anesthesia was found to decrease definitely the animal's resistance to this poison, a result in agreement with that obtained by all other investigators. Ravdin and his associates^{8,9} concluded from their experimental work that a high-protein, high-carbohydrate, low-fat diet afforded the greatest protection against chloroform. They also emphasized the importance of supplying an adequate caloric intake. Miller

On account of the conflicting views still existing regarding the significance of carbohydrates and proteins in the prevention of liver damage and death from hepatic insufficiency following administration of chloroform or carbon tetrachloride, it was decided to restudy the subject in the hope that additional information could be obtained. The fact that starved animals are more susceptible to these poisons than unstarved ones is generally accepted. However, the mechanism by which starvation brings about this

decreased resistance is by no means agreed upon. If carbohydrates and proteins acted directly, then the administration of glucose or of a protein hydrolyzate to animals prior to anesthesia should increase their resistance over that of corresponding animals receiving no foodstuff. Their administration afterwards, on the other hand, though not necessarily preventing liver necrosis, might reduce the strain on that organ by preventing fat infiltration of the liver or by some other mechanism, thus enabling the liver to regenerate when otherwise the damage might progress to such an extent as to be incompatible with the animal's survival.

nation. Approximately one-half of each lobule was ground together in a mortar, after which samples were taken and these were analyzed for neutral fat and cholesterol. The analytical procedures used have been described previously.¹⁴ Typical analytical results are shown in Tables 1 and 2, and in Figure 1. Cholesterol values are not included as they were all approximately normal, averaging 0.3 gm. per 100 grams of wet liver tissue.

A somewhat similar experiment was carried out on dogs. The same general results were obtained. Six dogs which were on Purina dog chow for at least a week, were starved for twenty-four hours and

TABLE 2
EFFECT OF AMINO ACIDS WITH AND WITHOUT CARBOHYDRATES ON LIVER LIPIDS FOLLOWING
CARBON TETRACHLORIDE ADMINISTRATION

EXP. NUMBER	NUMBER OF RATS	AVERAGE BODY WT.	AVERAGE LIVER WT.	LIVER NEUTRAL FAT + CHOL.**	SUPPLEMENTS*
1	+	GM. 245	GM. 9.1	6.9 (6.6-7.5)	Controls.
	+	230	8.4	6.3 (5.0-7.0)	20% amino acid solution shortly after CCl ₄ and at 3 hr. intervals for a total of 5 doses.
2	3	147	6.9	10.3 (6.6-16.9)	Controls.
	3	146	7.1	5.6 (3.0-7.5)	20% amino acid solution 5½ and 3 hr. and 10 min. before CCl ₄ .
	3	147	6.9	8.4 (5.2-14.5)	20% amino acid solution shortly after CCl ₄ and at 3 hr. intervals for a total of 3 doses.
3	+	205	6.7	8.0 (7.5-9.4)	Controls.
	+	216	5.8	2.2 (1.7-2.9)	30 gm. of glucose in 100 cc. of a 20% amino acid solution shortly after CCl ₄ and at 3 hr. intervals for a total of 5 doses.
4	+	250	9.5	5.6 (1.6-8.8)	Controls.
	+	231	8.3	5.6 (4.0-6.9)	42 gm. of glucose in 100 cc. of a 20% amino solution 5 and 2½ hr. and 10 min. before CCl ₄ , and again shortly after CCl ₄ and at 2½ and 5 hr. thereafter.
	+	237	8.4	5.2 (4.2-6.3)	Above solution shortly after CCl ₄ and at 2½ hr. intervals for a total of 3 doses.
5	5	216	7.5	7.0 (3.3-11.5)	Controls.
	5	204	7.1	4.7 (3.6-5.8)	30 gm. sucrose + 20 gm. dextrin in 100 cc. of a 20% amino acid solution at 10 a.m. shortly after CCl ₄ , again at 1:30, 5, 7:45, 12 midnight, 8:45 next morning, 1 and 5 p.m. Animals killed at 9 a.m. next day, about 47 hr. after CCl ₄ .

*All supplements were given at a level of 1 cc. per 100 grams of body weight.

**Liver neutral fat plus cholesterol values are given as per cent wet weight (Range given in parenthesis.)

EXPERIMENTAL

Food was removed from the cages of albino rats of approximately the same age, size and sex. Some were then given food as indicated in the tables, while others received none. All were anesthetized with carbon tetrachloride approximately twenty-four hours after the food was removed. The method of anesthesia has been previously described.¹³ The animals were killed by decapitation approximately twenty-four hours after anesthesia, their livers were removed and a portion taken for histological exami-

injected subcutaneously with 0.5 cc. of carbon tetrachloride per kilogram of body weight. Shortly after the carbon tetrachloride administration four of the animals were given by stomach tube, 10 cc. per kilogram, of a 20 per cent sucrose solution. This was repeated every four hours for the next four days. Blood glucose, N.P.N. and total plasma fatty acids were determined at intervals throughout the experiment. The values for glucose and N.P.N. are graphically presented in Figures 2 and 3. The blood for these analyses was removed just prior to

the administration of sucrose to the treated animals. The values for total plasma fatty acids are not included as they showed no definite difference between the treated and control animals. As a whole, the control animals showed the lower fatty acid level but the difference was too small to be considered significant. The animals were killed at the end of the four-day period, their livers removed and analyzed for neutral fat and cholesterol as well as histologically examined. The analytical results are graphically presented in Figure 4. Studies similar to those on the rat were carried out on 20 rabbits using chloroform as the anesthetic agent, the same general results being obtained.

DISCUSSION

It will be seen from the results presented that the administration of carbohydrates in sufficient quantity and at frequent intervals following carbon tetrachloride administration, prevented any marked increase in liver fat. On the other hand, the administration of carbohydrates prior to the administration of the carbon tetrachloride exerted no inhibiting effect upon the fatty infiltration of the liver. In the rat, five doses of 4 to 5 grams of either sucrose or glucose per kilogram of body weight over an approximately twelve-hour period following the anesthesia were usually sufficient to keep the liver neutral-fat content down to approximately a normal value. Three similar doses over a six-hour period, though exerting a definite effect, allowed considerable fatty infiltration of the liver. A somewhat similar response was obtained from five doses of 2 grams per kilogram of body weight over an approximately twelve-hour period. Five doses of 3 grams per kilogram at four-hour intervals following anesthesia also were not sufficient to prevent a definite rise in the neutral fat content of the liver. In the dog, however, the administration of 2 grams of sucrose per kilogram of body weight every four hours for a four-day period was sufficient to give a normal neutral-fat content of the liver at the end of that time, while that of the controls was definitely increased. Amino acids, when administered at a level of 2 grams per kilogram of body weight for five doses at three-hour intervals, exerted no demonstrable effect. However, a combination of amino acids and carbohydrates was satisfactory. The negative effect of the amino acids by themselves was probably due

to our inability to supply them in amounts sufficient to meet the animal's caloric requirement.

It would appear justifiable to conclude from these results that if fatty infiltration of a damaged liver is to be prevented, it is necessary to supply the animal with an adequate caloric intake. This, in the rat, would appear to be in the neighborhood of 80 calories per kilogram of body weight per twenty-four hours. The importance of supplying a sufficient caloric intake to patients with liver disease has been emphasized especially by Ravdin.⁹

The degree of liver necrosis noted in the livers of the rats killed twenty-four hours after anesthesia was roughly the same in both controls and treated animals, irrespective of whether the supplements were given before or after anesthesia or both before and after anesthesia. However, when the supplements were continued over a two-day period after anesthesia and the animals then killed, the livers of the treated rats, on the whole, showed less necrosis than those of the controls. No difference in the degree of necrosis was noted between those given carbohydrates, or carbohydrates plus amino acids. The dogs given sucrose over a four-day period following carbon tetrachloride administration, showed less liver damage than the control animals which received no food during that period. Although the administration of an adequate caloric intake of carbohydrates, or of carbohydrates plus amino acids does not materially reduce the degree of liver necrosis resulting from anesthesia with carbon tetrachloride or chloroform, nevertheless, it seems logical to assume that administration of these foods, through inhibiting fatty infiltration, increases the liver's chance of regeneration and the consequent survival of the animal.

This investigation unfortunately throws no light on the reason why starved animals are more susceptible to chloroform or carbon tetrachloride than animals fed a normal diet. The results which we have obtained from the administration of amino acids or of carbohydrates prior to anesthesia, indicate that these foods are not responsible *per se* for the increased resistance of well-fed animals to these toxic agents. It would appear that if one is considering how best to prevent death from exposure to these poisons, two factors must be considered: first, how to decrease the amount of liver damage which will result from exposure to a definite amount

of these poisons; and second, how to reduce the strain on the damaged organ so as to give the animal a better chance for recovery. The first can be accomplished to a considerable extent by the administration of certain sulfa-drugs,^{15, 16, 17, 18} by subcutaneous injections of such material as xanthine, india ink or sodium ricinoleate,^{19, 20, 21, 22, 23, 24, 25, 26} or by preventing starvation by means of a low fat diet. The present investigation indicates that recovery from liver damage can be favorably influenced by the administration of an adequate amount of carbohydrates so as to keep fatty infiltration of the liver to a minimum. Administration of calcium, as shown by the experimental work of various authors,^{27, 28, 29} also favorably influences the animal's chance of recovery from acute carbon tetrachloride and chloroform poisoning.

SUMMARY

The administration of large amounts of either glucose or sucrose prior to anesthesia with carbon tetrachloride, exerted no inhibitory effect on the development of fatty livers in experimental animals. However, their administration in sufficient amounts after anesthesia greatly reduced or completely inhibited this fatty infiltration. The degree of liver necrosis evident at the end of twenty-four hours after anesthesia was, on the whole, not affected by the various supplements employed. However, when these supplements were continued for two days or longer, the treated animals showed less liver necrosis than the corresponding controls. It is suggested that carbohydrate administration, through inhibition of fatty infiltration of the liver, may enable that organ to regenerate when otherwise this would not be possible.

The amino acid solution used was kindly supplied by Frederick Stearns and Company, Detroit, Michigan.

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GINGIVAL HYPERPLASIA ASSOCIATED WITH DIPHENYLHYDANTOIN THERAPY

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Since 1938, when Merritt and Putnam¹ introduced diphenylhydantoin sodium for the treatment of epilepsy, this drug has been widely used as an anti-convulsant. Certain toxic reactions have been observed following its administration.² Among these are chronic gastritis and hyperplasia of the gingivae. The purpose of this article is to describe two cases of severe gingival hyperplasia associated with dilantin sodium therapy.

The incidence of gingival reactions in patients receiving dilantin has been reported as low as 3 per cent³ and as high as 62 per cent.⁴ Lately Stern, Eisenbud and Klatell⁵ recorded changes in over half of 50 patients followed for a period of two years. They pointed out that the incidence and degree of pathologic change increase with a longer period of medication and intimated that early conservative estimates should be regarded with caution.

The earliest signs of gingival reaction to dilantin are minute, and recognizable only to a trained observer. They are more qualitative than quantitative in nature and consist of a progressive, granular, warty change in the appearance of the gingival surface. The average reaction is mild and severe changes are seldom observed. The severe reaction is characterized by a massive hyperplasia of the interproximal papillae that may include the gingival festoons. This overgrowth of tissue may cover most of the clinical crowns of the teeth.

The mechanism by which the dilantin causes changes in the gingivae is still obscure, as is the immunity and susceptibility exhibited by patients. No direct correlation with diminution of salivary output, impairment of local resistance, or any dietary deficiency could be demonstrated.

Three methods of treatment may be resorted to: (1) conservative periodontal treatment, (2) surgical removal of the hyperplastic tissue, (3) withdrawal of the drug. A partial resolution of the gingival overgrowth usually occurs when dilantin is discontinued. However, gingival hypertrophy alone does not seem to justify a substitute.

The first case observed was that of a male of 18

years of age. He had been treated for epilepsy since early childhood. Three years ago, dilantin was substituted in part for phenobarbital. Changes in the gingivae were noticed by the patient during the past year. They progressed rapidly. Treatment was requested due to the unpleasing appearance of the overgrowth of tissue. The changes were so severe that the entire clinical crown of some of the molar teeth was covered by gingivae (fig. 1). Figure 2 reveals the appearance of the teeth two months after the hyperplastic mass had been excised.

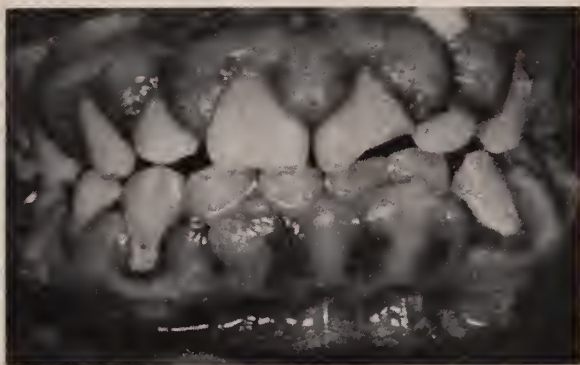


Fig. 1. Hyperplastic gingivae of 18 year old male treated with dilantin-sodium.



Fig. 2. The same case seen in Fig. 1 two months after surgical removal of the hyperplastic gingivae.

The second case of severe gingival hyperplasia was observed in a girl, 11 years of age, who was being treated with dilantin for spastic disorders. The overgrowth was so extensive that it resulted

in impaired function during mastication. The clinical crowns of the teeth were almost covered by the gingivae (fig. 3). The general physical condition



Fig. 3. Hyperplastic gingivae of 11 year old girl treated with dilantin-sodium.

of this patient was so poor that no treatment was given.

The hyperplastic tissue in these cases was firm in texture and exhibited little evidence of inflammation. The surface was nodular and well epithelialized. No evidence of hemorrhage was observed nor was there any change in color.

A section was made of tissue taken from the gingivae in the anterior part of the mouth of the first patient (fig. 4). The epithelium is thicker and more hornified than normal. There is a marked increase in the amount of subepithelial connective tissue and collagen. An exudate, composed chiefly of round cells, is present in the connective tissue. This exudate was no more predominant than is usually seen in normal gingivae.

The histologic picture shows that changes in the subepithelial connective tissue are mostly responsible for the gingival overgrowth. Differential diagnosis should be made with other generalized hyperplastic changes of the gingivae in mind, notably those presumably caused by endocrine disturbances in young patients. In these individuals the hyperplasia is less apparent and the patient's history rules out the dilantin relationship.

When the classic picture of dilantin hyperplasia is altered by the presence of local irritating factors such as poor mouth hygiene with accumulation of calculus about the teeth, the gingivae are swollen, red, tender and bleed readily. In these cases the gingival changes resemble those found in blood

dyscrasias and the presence of leukemia is a possibility that should not be overlooked.

As a general rule all methods of treatment give favorable results, if the patient is cooperative and keeps oral hygiene at a high level. Gingival hypertrophy alone appears insufficient to warrant discontinuing the use of dilantin, providing it is of benefit to the patient's general condition. The choice between surgical removal of the diseased gingivae and local treatment should be based on the psychic reaction of the patient to the disfigurement, his general condition from the standpoint of sur-



Fig. 4. Photomicrograph of section of tissue taken from gingivae seen in Fig. 1.

gical risk, and his willingness to cooperate in the treatment. Successful local treatment is largely dependent on the patient's ability to follow directions for home care of the teeth. It is indicated in the milder type of reaction and in patients that are of a relatively normal intelligence level.

Surgical treatment is more rapid and gives satisfactory results in cases with severe changes. The esthetic result is pleasing and there is little tendency for recurrence providing the patient practices rigid home care. In those individuals of an intelligence level that precludes reasonable personal attention to the condition of the gingivae, surgical treatment is of value when the overgrowth is so severe that it

interferes with function. In such instances the relief is of temporary value.

SUMMARY

1. Gingival hyperplasia associated with dilantin sodium therapy has been discussed.

2. Two cases have been reported.

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Hospital, upper left center, State Capitol, lower right.

THE COUNCIL MEDICAL SOCIETY OF VIRGINIA

The Council of the Society met on January 27, 1944, in Richmond, with the President, Dr. C. B. Bowyer, presiding. Others present were: Dr. H. B. Mulholland, president-elect; Dr. N. G. Wilson, vice-president; Drs. F. C. Pratt, J. L. Rawls, W. B. Porter, J. L. Hamner, W. C. Akers, J. J. Giesen, A. F. Robertson, Jr., Percy Harris, and F. H. Smith, councilors, Dr. M. P. Rucker, editor; Dr. I. C. Riggin, State Health Commissioner; Drs. W. C. Caudill, W. B. Blanton, and E. P. Lehman, chairmen of committees, and several members of the Legislative Committee and others interested in the Society's legislative affairs.

Following lunch, Dr. Bowyer called the meeting to order and asked for action on the minutes of the last Council meeting. These were approved as printed in the MONTHLY (pages 624-5, December, 1943).

He said that cards had been sent the councilors several weeks ago, asking them to indicate date they preferred for next meeting of the Society, as it was necessary to make arrangements with the hotel promptly in order to secure a date in October. In accordance with the wishes of the larger number, dates for the 1944 meeting in Richmond had been set as October 23, 24, and 25. These were approved by the Council.

The President then appointed Drs. Rawls and Porter as the Budget Committee to prepare and present a budget at the annual meeting of the Council.

Dr. Bowyer said the Secretary had advised that the financial condition of the Society is such that she felt more bonds could be purchased in addition to the seventeen bought in December. For patriotic reasons (the 4th War Loan drive being on) and as an investment, motion was offered that the Secretary invest sufficient of the Society's funds in the F Series bonds to make \$2,000.00 at maturity. This was approved and carried.

Dr. Lehman, chairman of the Cancer Committee, spoke of the work of the Virginia Cancer Foundation. He said that Virginia is one of ten states having no cancer law. The Foundation had prepared a bill to present the Legislature, but the Governor felt there was no chance of passing it this year as it called for an appropriation. The Foundation did not wish to push it in view of the Governor's feeling in the matter, but decided that, through the Society's legislative chairman, they would present a resolution to the General Assembly for a study program for cancer control in Virginia, that it may be considered by the Legislative Advisory Council. Motion was made to approve Dr. Lehman's action and was carried.

Dr. Emmett, chairman of the Committee on Public Relations and Medical Service, was not present, but Drs. Mulholland and Riggin stated that the committee had met to discuss several matters. Dr. Riggin said that one mat-

ter under consideration by this committee was the rehabilitation of men turned down by the army. The Rehabilitation Division of the State Board of Education had money for this purpose and the committee felt it a worthy cause—one which should have careful consideration, especially as they wish the backing of the medical profession. Unless there was objection, Dr. Bowyer said he would have Mr. Johnson of this Board speak to the Council later.

Dr. Blanton, chairman of the Committee to Study the Coroner Situation, said he was not as optimistic as he had been, but he was not discouraged. The Legislative Advisory Council had turned his committee report over to a subcommittee headed by Senator Battle. The Committee had been unanimous in its opinion that the plan is a good one but felt the General Assembly would not adopt it at this session on account of the appropriation required. Dr. Blanton said the committee thought it might be well to get their bill introduced this year, even if they could not secure the appropriation and that they might change the bill to provide that no one now holding a coroner's position should be put out of office. After discussion, motion was adopted that the Council approve the action of the committee to go ahead with its plans.

Dr. Caudill, chairman of the Legislative Committee, told of the three bills presented by the chiropractors and naturopaths for separate boards and also the bill presented by the Society to amend the Medical Practice Act. He then presented the following resolution with regard to the bills now before the General Assembly and asked the pleasure of the Council with regard to it:

WHEREAS, the General Assembly has before it House Bills 5 and 7 creating separate examining boards for Chiropractors and Naturopaths, and House Bill 6 creating a so-called basic science examining board dominated by members of these two groups, which bills also contain provisions admitting to practice without examination and regardless of competency nearly all chiropractors and naturopaths now in Virginia; and

WHEREAS, the board created by House Bill 6 is wholly incompetent to examine candidates on the basic science subjects, these subjects never having been capably taught or seriously studied in any Chiropractic or Naturopathic school, and the weakness of this board makes the plan of regulation proposed by the Campbell Commission and contained in these bills a travesty on medical licensure; and

WHEREAS, the General Assembly likewise has before it for consideration House Bill 29, sponsored by the Medical Society of Virginia and the State Medical Examining Board, which requires applicants in every branch of practice to pass a basic science examination given by the medical members of the present examining board, with candidates known only by numbers to insure impartial grading, and with a second examination adapted to the school of practice of the applicant, a Chiropractor and a Naturopath being added to the board to examine and grade the applicants in these fields of practice; and

WHEREAS, it is the considered opinion of this Council that the passage of the Campbell Commission bills will break down the high medical standards established through sixty years of effort on the part of our profession, and that the revision of the Practice Act in House Bill 29 presents a fair and impartial regulatory plan which will safeguard the health and general welfare of the citizens of our State; now therefore,

BE IT RESOLVED by the Council of the Medical Society of Virginia in meeting assembled at Richmond, this 27th day of January, 1944, speaking for the more than two thousand members of the profession on the Society's rolls, that the Medical Society of Virginia hereby earnestly requests the members of the Senate and the House of Delegates of Virginia to defeat House Bills 5, 6 and 7 proposed by the Campbell Commission, and to enact into law the revision of the present Medical Practice Act contained in House Bill 29.

Dr. Mulholland moved its adoption. Dr. Bowyer then asked each doctor present to express his views on this matter, following which Dr. Rawls moved adoption of the resolution with the recommendation that a copy of it be put on the desk of each senator and delegate in the General Assembly. Carried.

Dr. Bowyer next presented Mr. Anderson and Mr. Johnson of the Rehabilitation Division of the State Board of Education that they might explain the plans they had with regard to rehabilitation of the physically impaired. They stated that the Board had been interested in rehabilitation work since 1920 and, with Federal aid now promised, they are able to expand this service for those unable to pay their own way. They do not wish to set up any plan not understood or approved by the medical profession and the Board wishes their advice. They presented a pamphlet on Physical Restoration in Vocational Rehabilitation and explain that vocational counseling is the crux of the work and vocational adjustment must be set up early. They will need doctors to sit down and go over details with them, and would like an advisory committee (perhaps three men) who will assist them in formulating a workable program. They stated that in Virginia last year, 1,278 defects were corrected and these people secured employment. Their work is with non-service people and they have headquarters in Richmond, though it is their aim to serve people as near their homes as possible. Dr. Bowyer said the Society would be glad to work with the Board as fast as possible. In the meantime, they may contact the councilors in any emergency and they will assist until some definite plan may be worked out. A motion was then offered that the committee be composed of the present committee on Public Relations and Medical Service, augmented by two men from Richmond, and be known as the Rehabilitation Committee, the President to name the two men. Carried.

The President presented a letter from the American Medical Association in regard to having the State Societies contact component societies and set up organizations to work for the 4th War Loan. It was felt that each man would take what bonds he could but that it

was now too late to contact the societies and have them organize for this. The letter was ordered filed.

Dr. Mulholland said the Committee on Public Relations and Medical Service had held two meetings and at these the subject of medical care had caused much discussion. The Governor wished to know about the cost of medical care and Dr. Riggin had secured for him fees and all available information. The Governor feels that medical care is a problem of the State and that any proposal for medical care should have the backing of the Medical Society of Virginia. He agreed to appoint a commission to study medical care and the distribution of doctors in cooperation with the medical profession. After discussion, the following resolution was offered and adopted:

That the Council of the Medical Society of Virginia approve the proposed plan to appoint a legislative commission for the study of medical care in Virginia, and it would suggest that the Council be given the privilege of advising with the Governor and this Commission from time to time on this important subject, and

It is further respectfully requested that two members of the Commission be members of the Medical Society of Virginia, as recommended by the Council of the said Society.

Dr. Mulholland said he had received a letter from Powers and Anderson, with reference to the proposed 3 per cent sales tax on all retail sales. They had asked him to present this matter to the Council and have the doctors take action through their Legislative Committee to have health supplies, including drugs, medical equipment and supplies, sold to physicians, dentists or hospitals be considered a wholesale transaction, or, if possible, to have these items entirely exempted by name from tax. Motion was made that this letter be turned over to the Legislative Committee with the approval of the Council and that all possible medical supplies be omitted from taxation. Carried.

Dr. Smith said that the Legislative Advisory Council had recommended streamlining all boards and someone had suggested that the State Board of Medical Examiners be cut to five members. Neither he nor Dr. Preston felt that the Board could function satisfactorily if reduced to this number and he thought it would be well for the Legislative Committee to keep this in mind. A motion was then made and adopted that the Council is opposed to any streamlining of this Board and if the Legislative Committee hears of any activity in this line, they get to work to oppose it.

Adjournment followed.

AGNES V. EDWARDS,
Secretary.

Approved:

C. B. BOWYER,

President.

February 12, 1944.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

The patient was a thirty-eight year old colored woman who had had ten previous pregnancies. She first visited a physician during the fourth month of her pregnancy and did not consult him again until the eighth month. No information is available regarding the findings at the time of the first visit. At the second visit when eight months pregnant she was referred to a hospital where she was admitted two days later.

The history obtained at the time of admission to the hospital revealed that there had been considerable nausea and vomiting throughout the entire pregnancy. One month before admission she had become dyspneic and had to be propped up on pillows to enable her to rest. She coughed frequently, particularly at night.

Examination at the time of admission revealed a somewhat obese colored female about eight months pregnant, who had to sit up in order to breathe comfortably. Blood pressure 200/140, temperature 99.8, pulse 120, and respirations 32. There were a few moist rales in both lung bases. There was moderate edema of the lower extremities. The optic fundi showed a vascular sclerosis, which was thought to be an acute process superimposed on a chronic hypertensive disease. Laboratory examinations showed a red blood count of 3,760,000, hemoglobin 76 per cent, and white blood count 9,600. The urine showed four plus albumin and a few granular casts. An electrocardiogram showed evidence of myocardial damage. The Wassermann was negative. She was

treated by digitalization and restricted fluids. Five days after admission she was much improved, although later in the day she started vomiting and complained of epigastric pain. She continued to vomit, blood pressure 230/152, and clinical jaundice was noted. During the entire day there was only 50 cc. of dark, highly concentrated urine excreted. She went into spontaneous labor and delivered a macerated stillborn infant spontaneously. Following the delivery she seemed temporarily improved, but then became worse again and died thirteen hours postpartum.

COMMENT

A review of this patient's record indicates that this individual should have avoided pregnancy, as she undoubtedly had a hypertensive cardio-vascular disease. After pregnancy did occur she should have sought medical attention and advice in the second or third month of the pregnancy, at which time the pregnancy should have been terminated and future pregnancies prevented probably by a sterilization operation on the Fallopian tubes. Both of these procedures could have been carried out at the same time by abdominal hysterotomy and tubal ligation. Even when seen by her physician in the fourth month it would seem that the above course should have been followed. When cardiac failure appeared at the eighth month of pregnancy, the course followed and the treatment prescribed seems to have been that generally accepted as correct at the present time.

A doctor should have a falcon's eye, a girl's hand, and a lion's heart.—DUTCH PROVERB.

A doctor gets less work from six men than from one woman.—SPANISH PROVERB.

PUBLIC HEALTH

I. C. RIGGIN, M.D.

State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for January, 1944, compared with the same month in 1943, follows:

	January 1944	January 1943
Typhoid and Paratyphoid Fever-----	5	15
Diarrhea and Dysentery -----	120	95
Measles -----	985	417
Scarlet Fever -----	212	258
Diphtheria -----	24	56
Poliomyelitis -----	1	4
Meningitis -----	72	93
Undulant Fever -----	4	3
Rocky Mountain Spotted Fever -----	0	0
Tularemia -----	7	16

PREMATURE BIRTH AND INFANT MORTALITY

Although data relating to the exact number of premature births in the State is unavailable, results of statistical studies made in several parts of the country indicate that between 4 and 5 per cent of all infants are born prematurely. Based upon a conservative rate of 4 per cent, an estimated number of 2,732 premature births occurred in Virginia in 1943 among 68,300 live births. According to preliminary compilations, prematurity took a death toll of 964 infants under one year—about 35 per cent of the prematures last year in the State.

As prematurity plays the chief role among causes of death under one month of age, infant mortality due to this cause may well be studied from a preventive standpoint. Last year in Virginia, there

were 1,972 deaths under one month of age from all causes. Of this number 938, or 48 per cent, were due to premature birth. More than one-half of these infants (563) succumbed during the first day of life. Two hundred and sixty-one (28 per cent) lived more than one day but less than one week. One hundred and fourteen (12 per cent) passed the first week but expired before the end of the first month of life.

In addition to neonatal deaths, prematurity was responsible for the deaths of 26 infants between the ages of one and eleven months.

As in the case of infant mortality from all causes, premature birth showed a higher colored death rate (18.9 per 1,000 live births) than white (13.1). Male and female infant deaths have about the same relationship for prematurity as for other causes—a slightly higher rate for males than for females.

A significant association is also seen between premature birth and fetal loss. Among 2,230 stillbirths in the State last year, 941 (42 per cent) were reported to have been of less than nine months' gestation. To these should be added, undoubtedly, a large part of the 362 cases of unknown gestation period.

It is encouraging to note, in the past few years, the expansion of facilities for the care of premature infants, with an increasing number of incubators in the hospitals of the State. Infant mortality due to premature birth, therefore, should show substantial improvement during the coming years.

How to Cough and Not Spread Disease.

There would be fewer colds and much less tuberculosis, influenza, pneumonia, diphtheria, whooping cough and other diseases spread by saliva if people only would learn to cough and sneeze properly, Lieut. Samuel F. Harby, U.S.N.R., points out in the December issue of *Hygeia, The Health Magazine*.

"Whenever you feel a cough or sneeze coming on," he advises, "turn your head away from other people, and cough down at the floor. The thousands of small droplets of saliva which escape inevitably from your mouth as you cough are thus thrown down at the floor, where they have little chance of getting

on your associates, and especially into their mouths to cause respiratory infection.

"Even if you were able to cover your mouth completely with your hand, so that no droplets or spray could get by it, you would still fail to protect your associates from your germs, because your hand becomes soiled when you cough on it, and almost immediately afterward you touch other people, or the things which they will touch. Thus, indirectly, germs are transferred from your mouth to some one else's mouth—or what happens more frequently—to some one else's hand, food, eating utensil, or other object which will eventually reach his mouth. . . ."

WOMAN'S AUXILIARY to the MEDICAL SOCIETY OF VIRGINIA

President—MRS. W. CLYDE WEST, Alexandria.
President-Elect—MRS. PAUL C. PEARSON, Turpin.
Recording Secretary—MRS. C. C. SMITH, Norfolk.
Corresponding Secretary—MRS. N. G. SCHUMAN, Alexandria.
Treasurer—MRS. REUBEN F. SIMMS, Richmond.
Chairman, Press and Publicity—MRS. E. LATANE FLANAGAN, Richmond.

Cancer Control in Virginia*.

The progress of the work of the Virginia Cancer Foundation is dependent upon the efforts which individual men and women make in the fight against cancer. The philosophy back of the work is inspiring and unselfish. To be able to alleviate suffering and to save lives by one's own efforts produces a feeling of spiritual satisfaction.

The program of the Foundation to be effective involves giving, receiving and applying facts about Cancer Control. Each individual should apply the facts to himself or herself, and then to the well-being of others.

The objectives of the Foundation are Education, Organization and the Diagnosis and Treatment of Medically Indigent Cancer Patients.

Cancer Control Education should enter the homes of all of the 529,089 families in Virginia. It is obvious that this program needs the combined efforts of all intelligent, thinking citizens. Cancer is neither a respecter of race, or creed or color, nor does it stop in front of handsome doorways.

Last year the 100 counties, the 24 independent cities and all of the larger towns in Virginia, had cancer control units. Unfortunately many of these units were not permanent. It is imperative that the cancer control program be made an integrated and permanent part of the life of each community.

In 1943 there were 222 medically indigent cancer patients treated by the Foundation. This was an increase over previous years but many more should have applied for treatment.

*This article by our State Commander tells us what we as an Auxiliary can do in helping to banish from our State that dreaded disease, and second killer of our people—Cancer. Now let's get busy, and do our part.

ELLIE COCKE CAMPBELL,
 (MRS. HAWES CAMPBELL)
Chairman, Cancer Committee.

The wholehearted cooperation of the Woman's Auxiliary to the Medical Society of Virginia is an urgent need of the Foundation. Each member could be a motivating force in her community in helping—

- (1) to get the facts about cancer control into the homes of all the families in Virginia.
 - (2) to locate the medically indigent cancer patients and to see that they receive prompt and proper treatment.
-

Northampton-Accomac Auxiliary.

The regular quarterly meeting of this auxiliary was held at the home of Mrs. Rooker White, Keller, on January 11th, with Mrs. Carey Henderson, president, presiding. Appointment of committee chairmen was announced as follows: Program, Health and Education, Mrs. W. T. Green, Jr.; Social, Mrs. John Robertson; Leigh-Hodges-Wright Memorial, Mrs. O. R. Fletcher; Cancer Control, Mrs. S. K. Ames; Press and Publicity, Mrs. Holland Trower; Historian, Mrs. J. Walker Jackson, Legislature, Mrs. Rooker White; Bulletin, Mrs. S. S. Kellam; Jane Todd Crawford Memorial, Mrs. J. W. Jackson; Hygeia, Mrs. J. L. DeCormis and Mrs. Burleigh N. Mears; Finance, Mrs. J. Fred Edmonds. The Advisory Committee is Drs. J. Walker Jackson and John Robertson. The Auxiliary's Christmas Gift to the Northampton-Accomac Hospital was two bedside cabinets for patients' rooms. After the business meeting, a musical program and social hour were held.

Richmond Auxiliary.

The opening meeting of the Woman's Auxiliary to the Richmond Academy of Medicine was held on January 21st with the new president, Mrs. A. G. Shetter, presiding. Mrs. J. B. Stone presented several excerpts from the State meeting held last October and from the Southern Medical meeting in November. Dr. Morrison Hutcheson spoke to the group on "Pending Medical Legislation". We are looking forward to our February meeting when we will have a letter read on "Prediction of Fifty Years from Today" written by our historian.

MARTHA R. BAGBY.

VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

(Founded by Landon B. Edwards, M. D., April, 1874)

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Editor Emeritus

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The Medical College of Virginia Issue

LAST year when the *Journal of the Iowa State Medical Society* brought out their very attractive University of Iowa number, it occurred to us that we could go them one better since Virginia had two medical schools. Accordingly, the publication committee approached the University of Virginia and the Medical College of Virginia. The present issue is the first fruit of our efforts.

Dr. Rolland J. Main, the professor of Physiology of the Medical College of Virginia, is the acting editor. No number of the MONTHLY has ever been so carefully edited. The reader will miss the errors that are so common in medical *literature*. The adjective, "human", which consequently has no plural form is not employed to denote human beings. Patients and cases are not confused. If the patient has a fever, it is not called a temperature. No gynecological patient will be found between the covers of this number, although patients with gynecological maladies are discussed. If the patient receives the benefits of surgery, he or she is not operated, but operated upon. And finally, the bibliographies are uniform and conform to the best bibliographical usage.

The size of the MONTHLY has been increased for this special number. Nevertheless, several articles have had to be held over. They will appear in future issues when proper credit will be given to the Department of the College in which the work was done.

It has not been the custom for the editor to point his editorial finger at any article appearing in the MONTHLY, but before turning this space over to the acting editor, we cannot refrain from calling attention to the map of the Chimborazo Hospital which was the largest military hospital in the world. The original from which this copy was made is the only one in existence.

Floral Eponym (13)

HOSACKIA BICOLOR—DOUGLAS

DAVID HOSACK (1769-1835), a native of New York City and a graduate of Columbia, began the practice of medicine in Alexandria, Virginia, because he believed it would be the capital of the United States. This venture evidently did not turn out as he expected for after several years he went to London for further study. He then settled in New York where he became the leading surgeon. Dr. Hosack was active in every medical enterprise. He was successively the professor of botany, materia medica, surgery and midwifery, the theory and practice of physic and clinical medicine. His interest in flowers centered in the Elgin Botanic Garden which he founded in 1801 on the present site of Radio City. He was the author of three volumes of medical essays, of numerous articles in the medical journals, and of the life of Dewitt Clinton and Hugh Williams. He was the co-editor of the *Medical and Philosophical Register*. The genus *Hosackia* contains from forty to fifty species, all American and mostly confined to the Pacific slope. It is closely related to *Lotus* with which some authors unite it. *Hosackia bicolor* (Douglas) is found from central California to Washington.

Societies

The Wise County Medical Society

Held its regular meeting on February 18th at Norton, with Dr. R. W. Holley, Appalachia, presiding. There were nineteen members and three visitors present. Following dinner, there was an open discussion of the question of Federal Aid and Socialized Medicine in Virginia and also the Healing Arts Bills. The speakers were Drs. C. B. Bowyer, R. L. Phipps, J. H. Hagy, and Glen Foster. The members then enjoyed a very interesting and well presented talkie-movie in color of otitis media and pediatrics by the Doho Chemical Company. This takes up the entire list of childhood diseases, one at a time, and discusses them with reference to otitis. The film is recommended to other societies as being excellent in subject matter and photography.

Officers for 1944 were elected as follows: President, Dr. Glen Foster, Stonega; vice-presidents, Dr. F. D. Willey, Dunbar, Dr. George C. Snead, Derby, and Dr. E. P. Cox, Norton; secretary-treasurer, Dr. W. B. Barton (re-elected), Stonega; Board of Censors, Drs. D. C. Keister, Imboden, C. L. Harshbarger, Norton, and F. S. Givens, Wise.

The Society enjoyed an average year during 1943, with four regular meetings and with an average attendance of better than 75 per cent of the mem-

bership. Two members were lost by death and five members are in the armed forces, which leaves the average age of the remaining doctors in the entire county above 50 years.

W. B. BARTON, *Secretary*.

The Roanoke Academy of Medicine

Held a dinner meeting at Hotel Roanoke on February the 7th. The scientific program was given by two members of the medical staff of the Woodrow Wilson Hospital at Staunton, as follows:

Nervous Reactions in Wartime by Col. John Minor, chief of the Medical Service; and

Perinephritic Abscess by Lt. Col. John H. Lyons, chief of the Surgical Service.

Richmond Academy of Medicine.

At the last regular meeting of the Academy, Dr. E. H. Terrell presiding. Nutrition was the subject for discussion and the following papers were presented:

Nutritional Activities of the State Department of Health by Dr. H. H. Henderson, and

Health Problems in Nutrition by Dr. Walter Wilkins of Washington, D. C.

The usual buffet supper followed the program.

News

Dates Set for State Meeting.

Dates have been set for the next meeting of the Medical Society of Virginia as October 23, 24 and 25. This will be held in Richmond, as previously announced, with headquarters at John Marshall Hotel. Owing to the crowded conditions of hotels, reservations should be made well in advance. This applies to transportation also, as it is easier to cancel than to secure last minute reservations.

Medical College of Virginia News.

Dr. C. C. Coleman, professor of neurosurgery, recently gave a paper on Surgical Treatment of Peripheral Nerve Injuries at the Percy Jones General Hospital, Battle Creek, Michigan.

Dr. William B. Porter, professor of medicine, gave a talk on the Cardio-Diaphragmatic Syndrome at a meeting of the Raleigh Academy of Medicine, Raleigh, N. C., and also attended a meeting of the National Research Council, Washington, D. C., as a member of the committee on drugs and supplies. Later in January he attended the annual meeting of the American Heart Association, being a member of the board of directors of that association.

Dr. J. P. Gray, dean of the school of medicine, and Dr. Harry Walker, associate professor of medicine, attended the annual meeting of the Council on Medical Education and Hospitals of the American Medical Association in Chicago, February 14-15.

Dr. Lewis E. Jarrett, director of the hospital division, attended the meetings of the American Hospital Association in Chicago the week of February 14. Doctor Jarrett is a member of the board of directors.

Dr. Maxwell R. Berry, Jr., assistant professor of medicine, is leaving the institution for Atlanta, Georgia, where he will enter private practice.

Dr. William T. Sangèr, president, addressed the Association of Virginia Colleges in annual session in Richmond on February 11.

Dr. Harvey B. Haag, professor of pharmacology, and Dr. Paul Larson, research associate in pharmacology, recently visited the University of Maryland,

speaking to the staff of the hospital on The Use of Tobacco in Health and Disease.

The Valentine Meat Juice Company has made a grant of \$200.00 for scholarships in the school of pharmacy.

The annual Stuart McGuire lectures are tentatively set for April 5 and 6. Dr. Finley Gayle, professor of neuropsychiatry, is chairman of the committee, and it is anticipated that the lectures this year will be in the field of neuropsychiatry.

News from the University of Virginia, Department of Medicine.

The Phi Beta Pi Medical Fraternity presented Dr. Karl Menninger, of the Menninger Clinic, Kansas City, Missouri, in a lecture on January 14th. His subject was "Psychiatry in Medicine".

Dr. Fletcher D. Woodward attended a meeting of the Sub-Committee on Otolaryngology, Division of Surgery, of the National Research Council in Washington on Friday, January 21st. He recently accepted appointments to the National Faculties in Broncho-Esophagology and in Otolaryngology of the War-Time Graduate Medical Meetings organized for medical officers in the Armed Forces and civilian doctors under the auspices of the American Medical Association, The American College of Physicians and the American College of Surgeons.

On January 24th at the University of Virginia Medical Society meeting, Dr. C. H. Mann of New York spoke on "Lymphogranuloma Venereum".

Dr. Henry B. Mulholland spoke on February 2nd at the Augusta County Medical Society at King's Daughters' Hospital in Staunton. His subject was "Federalized Medicine".

On January 12th he spoke on "The Diagnosis and Treatment of the Pneumonias" at the James River Medical Society meeting at Dillwyn.

The annual Sigma Xi lecture was given on February 9th by Dr. K. C. D. Hickman, research chemist of the Eastman Kodak Company, on the subject, "Low Pressure Distillation and Vitamin Production".

Dr. E. P. Lehman and Dr. W. H. Parker attended the meeting of the Society of University Surgeons at Vanderbilt University, February 9th through 12th.

Personnel Changes in the State Department of Health.

Dr. Thomas Scarlett, Health Officer of Harrisonburg, resigned effective February 12th to enter the armed forces.

Dr. T. F. McGough, Health Officer of Pulaski-Wythe Health District, Pulaski, resigned effective February 16th. He has also entered the armed forces.

Dr. D. C. Steelsmith, Health Officer of Halifax-Pittsylvania Health District, South Boston, has resigned effective April 1st.

Promotions in the Service.

Promotions of the following Virginia doctors in the Service have recently been noted:

To Lieutenant Colonel—

Dr. William Linwood Ball, Richmond.

To Major—

Dr. George R. Carpenter, Fairfax.

Dr. Joseph Lee Mann, Hampton.

Dr. Wilmer H. Paine, Charlottesville.

Dr. William R. Watkins, South Boston.

To Captain—

Dr. Donald L. Arey, Danville.

Dr. Harry Brick, Richmond.

Dr. George Stone Ferrell, Lynchburg.

Dr. John F. Gayle, Newport News.

Dr. William Cecil Graham, Richmond.

Dr. Lemuel E. Mayo, Portsmouth.

Dr. W. Lowndes Peple, Jr., Richmond.

Dr. Henkel Moser Price, Martinsville.

Dr. G. B. Arnold,

For sometime superintendent of the Lynchburg State Colony, recently resigned this position and has located in Lynchburg, with offices at 901 Allied Arts Building. He will limit his practice to internal medicine, neurology and psychiatry.

Dr. Herman F. Oppleman,

After nearly two years with Armed Forces in the southwest Pacific, has been retired from the Service because of physical disability, and has resumed general practice in Richmond, where he is associated with Dr. Richard S. Herring, with offices at 923 West Franklin Street.

Dr. Frank F. Thweatt, Jr.,

Senior Surgeon, USPHS., has been transferred from Washington, D. C., to Portland, Maine, where he is Medical Officer in Charge of the U. S. Marine Hospital. He is a graduate of the University of Virginia, Department of Medicine, in 1928.

The Richmond Society of Ophthalmology-Otorhinolaryngology,

At a dinner meeting at the Commonwealth Club on February 1st, presented the following program: The Eye and Ear Program of the Public Schools by Dr. C. L. Outland; Lip Reading by Miss Alice Burnett; and Work of the Virginia Commission for the Blind by Dr. S. Trattner. Dr. Peter N. Pastore is president of this Society and Dr. Clifford Folkes secretary.

Dr. Harvey H. Haag,

Professor of Pharmacology at the Medical College of Virginia, Richmond, who for several years has been a member of the Committee on National Formulary and Chairman of its sub-committee on Pharmacology and Posology, has recently been appointed to the General Committee of Revision of the United States Pharmacopoeia. These appointments have to do with the selection of drugs, the quality and standardization of which are to be given official legal recognition. The National Formulary is sponsored by the American Pharmaceutical Association, while the work of the United States Pharmacopoeia is carried on by representatives of the pharmaceutical, medical, dental, veterinary and chemical professions. Dr. Haag is the only person from Virginia on either of these two committees.

Dr. J. R. Saunders,

Formerly of Madison Heights, is now located at 1105 Allied Arts Building, Lynchburg, where he is engaged in general practice and obstetrics.

Dr. Hilmar R. Schmidt,

Formerly of Petersburg, is now located in Elkins, W. Va., where he is roentgenologist at the Golden Clinic.

Qualified Men Desired as Naval Officers.

Lieutenant Commander W. N. Davies, Director of Naval Officer Procurement for the Fifth Naval District, announces an acceleration in the Navy's Officer Procurement Program. Under present quota limits, many qualified men will be offered direct commis-

sions in the U. S. Naval Reserve for general sea duty.

Men up to thirty-five are eligible to apply if they meet the requirements set forth in the Officer Qualifications Manual and provided (1) they are in good physical condition with visual acuity of at least 15/20 in each eye without glasses and correctible to 20/20 with glasses, (2) they are college graduates with good scholastic record, (3) they have an acceptable business record, if employed, and (4) they have had experience in the direct handling of men and are able to operate effectively under stress.

Any men having extensive small boat experience in open waters would be considered even though their college work had not been completed, the Director stated. This consideration would also be extended to men between thirty and thirty-five who have not completed their college work, provided they have had an unusual amount of experience along lines valuable to the Navy and if they have been outstandingly successful in their vocation.

General sea duty has a high priority at this time and Commander Davies suggests that all eligible and interested men immediately write to or visit the Office of Naval Officer Procurement, either at Fifth and Cary Streets, Richmond 19, Virginia, or Kanawha Hotel, Charleston 1, West Virginia.

Dr. W. H. Turner, Jr.,

Recently of Round Hill, is now located at 182 Elm St., Oberlin, Ohio.

Major Grant R. Elliott, M.C.,

Of Orange, has returned from overseas duty with the Eighth Air Force in England where he has been for eighteen months. He is now in the Medical and Psychological Examining Unit No. 4, located at Greensboro, N. C.

Borden's Biolac Changes in Size.

Biolac, the modified evaporated milk manufactured by the Borden Company, will be further concentrated and its new container will be 13 ounces in capacity, in comparison with the present 16 ounce size. The new container will effect a savings in metal, labels and storage space, as well as permit a reduction in shipping weight.

Children's Memorial Clinic, Richmond.

Dr. Manfred Call, III, was elected president of this Clinic at its annual meeting on January 25th. Other doctors among the officers are Dr. Howard R.

Masters, vice-president, and Dr. Harvie DeJ. Coghill, secretary.

The Neuropsychiatric Society of Virginia

Held its annual meeting in the Richmond Academy of Medicine Building, Richmond, on February the 16th, under the presidency of Dr. Joseph R. Blalock of Marion, at which time the following papers were presented:

Pathology of Head Injuries Presenting Gross and Microscopic Demonstrations by Dr. John S. Howe, of the Department of Pathology, Medical College of Virginia;

Some Neuropsychiatric Complications of Head Injuries by Dr. Frank H. Redwood of Norfolk; and

Cases of Psychoses Following Head Injuries by Dr. J. F. Phillips of Central State Hospital, Petersburg.

These were followed by the showing of interesting movies demonstrating scientific work being done in Russia.

At the dinner held later at Commonwealth Club, there was a discussion of the Neuropsychiatric Program in Virginia and officers were elected for the ensuing year. These are: President, Dr. O. B. Darden of Richmond; vice-president, Dr. D. L. Harrell of Staunton; and secretary, Dr. J. Asa Shield (re-elected), Richmond.

The American Physicians' Art Association

Will have its seventh annual exhibit at the A.M.A. convention, Stevens Hotel, Chicago, June 12-16, 1944.

Everyone was impressed by the beauty of the Art Exhibition at the Atlantic City Session last year, but the 1944 Gallery in the main ballroom balcony will be even more beautiful and impressive.

Through the courtesy of Mead Johnson & Co., Evansville, Ind., there will be no fees for hanging and no express charges either way. The type of art to be exhibited includes personal work of the following types of medium: oil portraits, oil still life, landscapes, sculpture, water color, pastels, etchings, photography, wood carving, leather tooling, ceramics and tapestries (needle work). All pieces should be sent preferably by railway express collect, automatically covered with \$50 insurance.

Exhibitors should send NOW for entry blanks to Dr. Francis H. Redewill, Secretary, A.P.A.A., Flood Building, San Francisco; one entry blank should be used for each medium in which it is desired to

exhibit.

There will be about 100 trophies, including medals and plaques.

Color Films.

The motion picture in color, "Continuous Caudal Analgesia in Obstetrics," which was made available by Eli Lilly and Company, Indianapolis, for showing before medical societies and hospital staffs, has been in continuous demand since release several months ago. It was made at the U. S. Marine Hospital, Staten Island, by authorization of the Surgeon General, U. S. Public Health Service, and the demonstrations were carried out by Drs. Hingson and Edwards, originators of the technic.

The three films that were made at the Nutrition Clinic of the University of Cincinnati in the Hillman Hospital, Birmingham, Alabama, under the joint auspices of the Department of Internal Medicine at the University of Cincinnati and the University Hospitals of Cleveland have likewise been in constant circulation. One of these deals with thiamin chloride deficiency, one with nicotinic acid deficiency, and the third with ariboflavinosis.

None of the films contains advertising. They are available to physicians for showing before medical societies and hospital staffs.

Obituaries

Dr. Dennie Marvin Thomasson,

Well known physician of Lynchburg, died February 18th. He was sixty-five years of age and a graduate of the University of Virginia, Department of Medicine, in 1900. Dr. Thomasson had practiced in Lynchburg since his graduation and was at one time on the Lynchburg public health staff. In late years he had specialized in proctology and was a fellow of the American Proctological Society. Dr. Thomasson had been a member of the Medical Society of Virginia since 1903.

Dr. Arthur Grayson Vaden,

Of Temperanceville, well known physician of the Eastern Shore of Virginia, died in a Richmond hospital, on February 1st, after a long illness. He was seventy years of age and studied medicine at the former University College of Medicine in Richmond,

from which he graduated in 1895. Before moving to "The Shore", he practiced for sometime in Mathews. He had been a member of the Medical Society of Virginia since 1897. His wife and a son survive him.

Dr. William Mann Randolph,

Prominent physician of Charlottesville, died January 25th after an extended illness. He was seventy-four years of age and graduated in medicine from the University of Virginia in 1890. Dr. Randolph practiced in Charlottesville until 1913, returning there in 1928. He saw extended military service, being captain of Troop K, Albemarle Light Horse, from 1892 to 1897, and a major in the 17th Infantry, Virginia Volunteers, 1898-1904. He served during the World War with the rank of major. Following his return to Charlottesville, Dr. Randolph was connected with the Tuberculosis Control of the State Department of Health. He held many professional and civic positions, and had been a member of the Medical Society of Virginia for many years. His wife and seven children survive him.

Dr. Walter S. Quaintance,

Slate Mills, died February 3rd of heart disease. His death occurred just one month after that of his father, Dr. Oscar R. Quaintance. He was sixty-two years of age, and he graduated in medicine and dentistry from the Medical College of Virginia in 1882. Dr. Quaintance had practiced both professions at Slate Mills since shortly after his graduation. His brother, Dr. Rupert Wilson Quaintance, Lundale, W. Va., survives him.

Dr. James Tayloe Gwathmey,

A leading authority on anesthesia, who practiced for a number of years in New York City, and was formerly anesthetist at the New York Skin and Cancer Hospital, died February the 11th in the U. S. Veterans Hospital at Fayetteville, Ark. He was a native of Norfolk, eighty years of age, and graduated in medicine from Vanderbilt University in 1899. A daughter and son survive him.

Dr. Norborne T. Greer,

Of Rocky Mount, died January the 25th. He was seventy-five years of age and graduated in medicine from the University of Maryland in Baltimore in 1892. He practiced for several years in Hopewell, about time of World War I. His wife and several children survive him.



FOR THE CONSTIPATION OF PREGNANCY...

● Pressure of the fetus, lack of exercise and altered diet are factors which may induce constipation during pregnancy.

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oil suspended in an aqueous jelly. Five types of Petrogalar provide convenient variability for individual needs.

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NUTRITIONAL ANEMIA

IN INFANTS

REASONS FOR EARLY FEEDING OF PABLUM (OR PABENA)

1. The infant's initial store of iron is rapidly depleted during the first months of life. (Mockay,¹ Elvehjem²). About 30% of the iron freed from the hemoglobin during the first two months is lost, and while hemoglobin destruction takes place, all infants are in negative iron balance. (Jeans,³ and Usher, et al.⁴).
2. During the early months of life the infant obtains very little iron from milk — 1.44 mg. per day from the average bottle formula of 20 ounces or possibly 1.7 mg. per day from 28 ounces of breast milk. (Halt,⁵ Jeans³). The incidence of nutritional anemia has been found to be high among infants confined largely to a diet of cow's milk. (Dovidsan, et al.⁶ Usher, et al.,⁴ Mackay⁷).

For these reasons and also because of the low hemoglobin values so frequent among pregnant and nursing mothers (Strauss,⁷ and Gattlieb and Stearn⁸), the pediatric trend is constantly toward the addition of iron-containing foods at an early age, both to normal infants and those with pylorospasm. (Neff,⁹ Blatt,¹⁰ Brennemann,¹¹ Monypenny¹²).

THE CHOICE OF THE IRON-CONTAINING FOOD

1. Many foods high in iron actually add very little to the diet because much of the mineral is lost in cooking or because the amount fed is necessarily small or because the food has a high percentage of water. Strained spinach, for instance, contains only 1 to 1.4 mg. of iron per 100 Gm. (Bridges¹³).
2. To be effective, food iron should be soluble. Some foods fairly high in total iron are low in soluble iron. Thus egg yolk and liver have less soluble iron than does farina, which is very low in total iron. (Summerfeldt¹⁴). Oxalate-containing leafy vegetables are low in soluble iron and appear not to be well utilized as a source of iron by infants. (Kahler, et al.,¹⁵ and Stearns¹⁶).
3. Pablum (and Pabena) are high both in total iron (30 mg. per 100 Gm.) and soluble iron (7.8 mg. per 100 Gm.) and can be fed in significant amounts at an early age, without digestive upsets. (Blatt,¹⁰ Monypenny¹²). Clinical studies of sick and well babies have shown Pablum to be of value in raising hemoglobin values (Crimm, et al.,¹⁷ Summerfeldt and Ross¹⁸), even when egg yolk and spinach were not effective (Stearns¹⁶).

Pablum, a palatable mixed cereal food, vitamin and mineral enriched, and cooked thoroughly and dried, consists of wheatmeal (farina), oatmeal, wheat embryo, cornmeal, powdered beef bone, sodium chloride, alfalfa leaf, brewers' yeast, and reduced iron.
(The oatmeal form of Pablum is called Pabena.)

¹⁻¹⁸ Bibliography on request.

MEAD JOHNSON & CO., Evansville 21, Ind., U.S.A.

Virginia

MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

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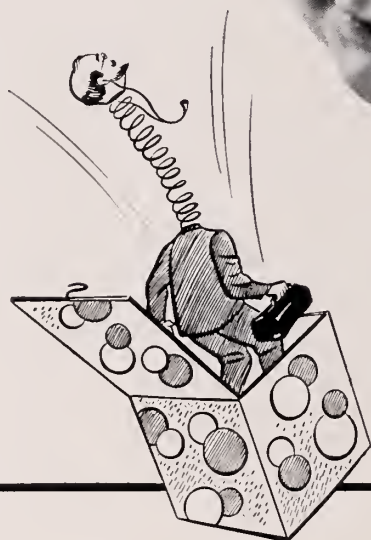
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Occupational
Therapy
Issue

April 1944

**"FOR A GENT WHO'S
WORKING LIKE CRAZY—
MY DOCTOR
SURE KEEPS
HIS HEAD!"**



"**G**OODNESS KNOWS, he's doin' the work of two or three doctors nowadays! No wonder he takes a *good* short cut when he sees it.

"He saw S-M-A—'cause he was *looking* for something that would help save him time from doing endless 'rithmetic about proportions of milk, carbohydrate, water for feeding formulas.

"And he began prescribing S-M-A—when he found out what an efficient time-saver it is. In just two minutes he was able to tell Mother how to mix and feed me my S-M-A* . . .


"*But S-M-A pleases my Doctor most because he knows that in it he is prescribing an infant food that closely resembles breast milk in digestibility and nutritional completeness!*

"So now he's *always* bragging about me and his other S-M-A babies!

"And Mother says she can hardly believe what S-M-A has done for *me and* my disposition! Sure looks like—**EVERYBODY'S** happy if it's an S-M-A baby!"

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S-M-A is derived from tuberculin-tested cows' milk, the fat of which is replaced by animal and vegetable fats, including biologically tested cod liver oil, with milk sugar and potassium chloride added, altogether forming an anti-rachitic food. When diluted according to directions S-M-A is essentially similar to human milk in percentages of protein, fat, carbohydrate, ash, in chemical constants of fat and physical properties. A nutritional product of the S.M.A. Corporation, Division WYETH Incorporated, Philadelphia.

Everybody's **HAPPY IF IT'S AN**  **BABY!**

REG. U. S. PAT. OFF.

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Guest Editorial

Africa and Modern Medicine

IN THE past Africa has had a profound influence on the Western Hemisphere; this influence continues more than ever to affect the life of all of us, and the whole story has not yet been told. It has been said that he who controls Africa will win this global war. The despised and downtrodden Dark Continent has become the military, economic and political crossroads of the world. It has for almost a century been the most fruitful field of work for the missionary doctor and other Christian workers; it was a medical missionary, Dr. Livingstone, who singlehanded opened unknown Africa to the world. From the medical angle also, more and more Africa has assumed greater importance. In 1916 it took the writer three months to go from New York, via Bordeaux, France, and down the West Coast of Africa into and up the Congo River, to reach his bush station 1,200 miles interior. This was done under great hardships and dangers, and primitive travel conditions. This year the same distance was travelled in the space of six days. Already airplanes have brought a new species of mosquito to Brazil that has become dangerous, and tsetse flies, fortunately dead, have been found in these same planes. Hence the vast importance of complete control of air communications, which have annihilated all distances, and therefore have brought Africa even far nearer to us than in the unhappy slave days.

The writer has spent 24 years in the interior of the Belgian Congo as a medical missionary, with a large and varied experience and has had the opportunity to visit far and wide over this great and most fascinating continent. This gave an opportunity to study especially its medical and public health problems. It is hard to overestimate the importance of this subject when now almost every part of Africa, including the tropical section, is occupied in some way or other by various units of our overseas forces and our nationals have penetrated every one of its many countries. Thus far there has been a lamentable ignorance among us regarding this continent in general and its influence on our life and economy and happiness. Many of us still have a vague memory of some atrocities that were committed on the Congo River years ago. (However, the Congo has no monopoly on such occurrences.) We are only too ready to believe many of the sensational stories and movies and wild game accounts and give more credence to Trader Horn than to people of character. Since the global war has come home to us, medical men are awaking to the realization that Africa is able to bring us again a number of tropical diseases which heretofore have been only theory to most of us. In 1942 a woman who had seen years of service in southern Belgian Congo was unable for months to have diagnosed a well advanced case of onchocerciasis with definite skin and blood picture, and subcutaneous tumors, in the great city of Richmond, Virginia. This is no reflection on the reputation of the eminent professional men in that great medical center, but it makes us realize that we must think of Africa too and, in fact, all tropical areas!

Moreover, Africa is an old friend of ours; witness the millions of the Negro race among us now in both the Americas. The monstrous crime of the African slave trade began in 1510, lasted over 300 years, and involved millions of unhappy people. It

brought to us as an inheritance from our forefathers the poignant and now critical race question. "Between 1680 and 1786, 2,130,000 slaves were imported into British colonies in West Indies and America." How many doctors know that these slaves also brought leprosy to us and that now we have thousands of cases in North and South Americas, Central America and the West Indies; also that more and more cases are being diagnosed, and that leprosy is becoming one of the most discussed diseases of the day? Besides this, Africa gave us Yaws, Schistosomiasis of the mansoni type, Filariasis of the *Microfilaria bancrofti* type, Dermatophilus penetrans, and undoubtedly other diseases. Likely Africans with African Sleeping Sickness (Trypanosomiasis) were brought over on the slave trading vessels though most of them died on the way and were thrown overboard. Ever since the white penetration of Africa, cases of this disease have been brought to Europe and America, but for lack of a suitable vector—the tsetse fly—have fortunately never gotten a foothold. The renewed, vastly more intimate contact with Africa by thousands of men will bring to us in time every disease of that continent, and we must be prepared for it. In fact many are already here in the returned personnel of our armed forces and war prisoners.

But we must study carefully every new situation. How easily facts that have not as yet been fully studied by those reporting them can miss the real situation. On August 24, 1943, the *New York Times* reported: "New Eye Disease Spreads in Mexico. African Mosquitos carried malady causing blindness. A disease causing blindness, relatively new to this hemisphere and brought to the southern part of Mexico by mosquitos from Africa, has spread to such proportions as to hold up completion of the Pan-American Highway, it was disclosed yesterday by Dr. Merle E. Frampton, Professor of Education at Teachers College, Columbia University, and principal of the New York Institute for the Education of the Blind. Dr. Frampton returned yesterday by plane from Mexico City, where he and three other American sociologists attended, as advisers, the first Mexican Government Congress of Public Health. The new disease, which the Mexican Government is making strenuous efforts to combat, is called onchocerciasis, Dr. Frampton said. The infection is transmitted to the blood stream by the bite of a rare type of African mosquito. The infection centers in the back of the head, affects the optic region and quickly causes blindness."

Actually this is not a new disease in the Western Hemisphere but has been found for a long time in Central America, especially in Guatemala, and extensive studies have been made there by such well known research workers as Dr. Richard P. Strong, Professor of Tropical Medicine, Harvard University, and his associates, as well as other workers. Complete information about this so called "blinding disease" can be obtained by referring to ONCHOCERCIASIS, Harvard University Press, Cambridge, Strong-Sandground-Bequaert-Ochoa and ONCHOCERCIASIS IN AFRICA AND CENTRAL AMERICA, in Supplement to *The American Journal of Tropical Medicine* January 1938, Strong-Hissette-Sandground-Bequaert. Dr. Strong, presently Colonel, Medical Corps, Director of Tropical Medicine, Army Medical School, Washington, D. C., has made the following comment in a recent letter to the writer: "I am glad to have your letter inclosing the cutting from the *New York Times*. I had not seen it before. I agree with you that it is unfortunate that the article quotes Doctor Frampton as stating that 'onchocerciasis is transmitted by the bite of a rare type of African mosquito'. The article is greatly exaggerated. Whether Doctor Frampton said these things or not I, of course, do not know. As you imply, the vectors of the Guatemalan and Mexican type of onchocerciasis are species of *Simulium*. I think the original foci in Mexico probably became established in the same manner as those did in Guatemala, but how this was brought about originally, I do not know and I am not sure that the

Mexican endemic areas are more recent than the Guatemalan ones. Since the Pan American Highway, however, runs close to the infected areas the danger of carrying cases of onchocerciasis will naturally be increased and perhaps the disease spread to other areas unless the situation is very carefully watched. The disease, as you know, is certainly not a new one in Mexico and has been studied there for a good many years. Recently the Pan American Sanitary Bureau, of which General Hugh Cumming is the Director, has been considering the question, together with Mexican authorities."

The writer in the Belgian Congo had experience with hundreds of cases of onchocerciasis and in 1934 had the honor of entertaining Dr. Richard P. Strong and his associates of the Harvard African Expedition which spent some months in that region for the express purpose of studying this baffling disease which causes so much blindness and for which, so far, there has been found no drug cure. The African vector of this disease and the particular species in the Lusambo area of the Belgian Congo, is the *Simulium damnosum*. Therefore it is a misstatement that the infection is "transmitted to the bloodstream by the bite of a rare type of African mosquito." Actually the disease manifests itself by the formation of deep subcutaneous cysts surrounded by an inflammatory capsule and containing inside of them as a rule the male and female worm. These reproduce and, with the migration of the thousands of microfilarii in and under the skin, there arises a definite urticaria, dermatitis, and thickening of the whole skin. The infection does not especially "center in the back of the head and affect the optic region and readily cause blindness" but is found in any part of the body especially in more exposed parts of the body wherever the gnat bites. It is however a fact that in the Western Hemisphere type of onchocerciasis the tumors are more frequent about the head while in African type they are found all over the body. (See excellent pictures and discussions of these points in above mentioned studies.) Only in heavy and repeated infections, and when the cysts are near the head or even face, is there danger of the microfilarii migrating, not into the optic nerve area but into the corneal structure, thus through an inflammatory reaction causing clouding and final blindness usually after many months or even years. The writer has removed as many as a hundred cysts from one individual and yet without blindness. The time has come when every American doctor must know all about onchocerciasis and its clinical symptoms and its dangers, for some day he will run into a case. If he thinks of it, the diagnosis is extremely simple; he will find microfilariae in the skin scrapings, adults in the cysts and a dermatitis of generalized character, with definite thickening of the skin, accompanied by a very high eosinophilia.

The above discussion of one particular disease, namely, onchocerciasis, has been purposely handled in detail as it clearly and dramatically illustrates the as yet unappreciated importance of Africa in modern medicine! Moreover it is very likely that this disease, too, was brought to us by the African slave trade, and its further spread simply awaits suitable vectors, better highways and inter-mixing of population. Already there is evidence of such a spread.

Africa and modern medicine! The challenge is here. May many thousands of young men and women dedicate themselves as medical missionaries, as nurses, as research workers, or as practicing physicians to protect our armed forces, our commerce, our missionaries, other overseas representatives, and to save peoples from death and suffering through ignorance and lack of help. Finally, may answers be found for many of these unsolved problems, and may Africa's contact with us and, in turn, our contact with Africa result in blessing and helpfulness.

E. R. KELLERSBERGER, M.D., D.T.M. & H.*

*General Secretary, American Mission to Lepers. (Medical missionary to the Belgian Congo, 1916-1940.)

INTRODUCTION

THOUSANDS of men will face a post-war future maimed in body and mind. Just how large the toll of manpower will be is anybody's guess.

But figures recently released show that because of mental illness the armed forces discharge 25,000 men a month, and because of other medical disabilities 45,000 additional men are released monthly.

The much talked about second front is expected to increase the casualties many times.

While we are in the midst of war it seems easy to promise that veterans handicapped as a result of service to their country will never lack for jobs. But the truth is that these men may be called upon to show a second and perhaps larger heroism in becoming adjusted in the civilian world.

Because the need will be greater than can be met by the Veterans Administration, the National Committee for Mental Hygiene has formed a Rehabilitation Division to see that adequate care is provided for all these men. It is expected that in addition to plans like that of the Federal Securities Administration and provisions of the Barden-LaFollette Bill, model state plans will be set up which will be adopted in all the states.

It is in line with these plans and the objectives stated that we are presenting in this number of the VIRGINIA MEDICAL MONTHLY five papers on occupational therapy.

These papers by outstanding men and women in the field, introduce occupational therapy as a tool in the hands of the physician. They depict "the occupational therapist and the problems in producing her," describe "The Curative Workshop" and its *modus operandi*, and the reader is transported to a larger rehabilitation center and shown how the "Rehabilitation of the Industrial Casualty" is brought about. And in "Occupational Therapy in Tuberculosis Treatment" the way is indicated for the use of this method of treatment in other medical problems. "The Role of Occupational Therapy in a Mental Hospital" depicts this as a psychiatric procedure which no well-equipped mental hospital can afford to be without.

In World War I the average cost of each psychiatric casualty to the taxpayer was \$60,000 and the total cost was almost a billion dollars, while the loss in human happiness and efficiency was beyond calculation. Many casualties of this type can be rehabilitated and the sooner facilities are provided and treatment begun, the more likely will be their chances of recovery.

HARVIE DEJ. COGHILL, M.D.,
Director-Psychiatrist, Children's Memorial Clinic,
Richmond, Virginia.

REHABILITATION OF THE INDUSTRIAL CASUALTY

ALEXANDER P. AITKEN, M.D.,

Rehabilitation Center, Liberty Mutual Insurance Company,
Boston, Massachusetts.

The present war has focused much attention on the rehabilitation of our war casualties. Many of our larger military institutions are now so equipped that rehabilitation of the injured begins on admission to the hospital. Physiotherapy and occupational therapy are instituted even while the patients are confined to bed. Although no official statistics are yet available, there is no question that such prompt treatment will shorten the convalescence of the injured. More important, however, than the time saved are the preservation of morale and the prevention of fixed deformities, both of which follow delayed or inefficient treatment. It is of equal importance that early and efficient treatment be rendered our industrially injured. Unfortunately, the facilities available to the military casualty are not yet available to the industrial casualty. The problem of rendering prompt and efficient care to those injured on the home front is a challenging one.

The all important factor in the treatment of any traumatic lesion is the element of time. Not only is time imperative in the immediate treatment of the injury but also in the aftercare. It is to be remembered that nature's only method of repair is by means of scar tissue. With time scar tissue becomes more dense and less elastic. The adhesions which grow in or about joints and bursa, within muscles, or between muscles, tendons and bones are the result of nature's attempt at repair. Unless such adhesions are broken or stretched by early motion, they may become so dense that normal function may never be regained. Failure to perform early motion thus may result in prolonged disability and in permanent loss of function. Immobilization of a joint results in muscle atrophy. The longer the period of immobilization, the greater the atrophy becomes and the more difficult the task of restoration of normal function to the involved muscles. Muscle atrophy is also due to failure to exercise the injured extremity. This failure to exercise on the part of the patient may be because of actual pain or fear of pain. In some instances he may not have been given exercises to do, or he may not have been properly instructed in detail. More often, his exercises have not been super-

vised and instead of actually moving the involved joint he has only learned how to compensate for his lost motion. This failure to exercise the injured member results in increasing muscle atrophy and joint fixation. The longer either condition persists, the longer the period of disability, and the poorer become the chances of eventual restoration of function.

Failure to exercise the body as a whole results in an increase of body weight and a loss of general muscle tone. The man becomes soft and he is said to have lost his stride. Even after the disabling lesion has healed, and when he should be able to return to work, he must first undergo a toughening up period at lighter work before he is able to resume his regular occupation.

Of the utmost importance is the influence of time on the patient's mental attitude. The longer the period of disability, the greater becomes the likelihood of the development of a depressed mental state. Fear that he may have lost his job, or the more serious fear that he may never be able to return to the only trade he knows or to any other type of employment, lowers the individual's morale. As his depression deepens, he becomes less receptive to any type of treatment and he is unapt to show the enthusiasm and cooperation so essential to his eventual recovery. A vicious cycle is thus established which is most difficult to break. The most serious complication of any industrial accident is the development of such a neurosis, a condition which in many cases could have been prevented by early and efficient treatment.

The problem of rehabilitation, either of the war or industrial casualty, becomes one of how to get the most efficient treatment in the quickest possible time. It becomes a race against time. How then is it possible to give such treatment to these casualties? This is a complicated and difficult problem. The answer must require considerable study by the medical profession. In an attempt to arrive at a solution to this problem the Liberty Mutual Insurance Company established a Rehabilitation Center in Boston in June of 1943. It is the purpose of

this institution to provide for adequate medical aftercare in cases of the disabled as a result of an industrial accident. The Center consists of two correlated departments of physical and occupational therapy under the direct supervision of two orthopedic surgeons, trained particularly in the field of traumatic surgery. In the near future, as the Center increases in size, the consulting services of a psychiatrist and specialist in physical medicine will probably be required.

Careful medical supervision is imperative in the operation of such a Center. As the great majority of cases admitted consist of fractures, amputations, and injuries to joints, muscles, tendons, bursae and peripheral nerves, the physician in charge must be well trained in the field of traumatic surgery. A careful examination on admission must be made. Not infrequently the admission diagnosis is either incorrect or incomplete. Complications, such as reflex vascular spasm, are frequently found. If further surgery is found to be necessary, the patient is sent back to his physician with this recommendation.

In many cases residual deformity and loss of motion are inevitable. The physician then has to determine the amount of recovery that can be expected and outline treatment accordingly.

The progress of each patient must be carefully followed and every encouragement given if progress proves to be slow. The patient must have complete confidence in the physician and be made to feel that the physician and all his assistants are vitally interested in his progress. Unless such a relationship exists between the patient and the entire personnel, treatment had better be discontinued.

The physician also must determine when an end result has been reached. When this time comes the patient himself appreciates that he can return to work and usually does so, without the added inducement of a lump sum settlement.

When an acute case is admitted to the Center, it is first sent to the physiotherapy department. Here baking, massage and graduated exercises are given until sufficient strength and motion has returned to permit of some occupational therapy. Such treatments are carried out after the patients have started their work therapy, if necessary. As the work tolerance is built up the physiotherapy is cut down, while the work therapy is increased. Our physiotherapy department is quite complete and almost any

form of physiotherapy can be administered. Shoulder wheels, steel bars, resistance bicycles, pulleys and weights, and a rowing machine are available for special exercises.

On admission to the occupational therapy department the patient is given actual work to do. This work is always done with the aim of increasing the strength and range of motion of the injured part. For example, cases with lost ankle motion are given work to do on a sewing machine jig saw, knee cases on a bicycle jig saw. Hand tools have padded handles to allow for gripping within the patient's range of motion. Sanding blocks are fashioned in all sizes, shapes and weights, according to the particular type of deformity encountered. Work is done at all levels and at any plane, the idea being to get the patient to use the extremity in such a manner as to increase any particular lost motion. Each patient presents a different problem, so tools and projects have to be fashioned for his particular need. The carpenter shop is complete; no power driven tools are used. The creation of finished articles is a tremendous stimulus to the patient. The depressed, belligerent and complaining patient, once his interest is aroused, begins to forget himself and a definite improvement in morale develops. Often the patients become so engrossed in their work that they must be carefully watched for muscle fatigue. Not infrequently such fatigue is discovered by the physiotherapists and the work in the shop is then cut down.

The psychology of working with a group is also an important factor. The kidding, which is constantly going on in the shop, does much to bolster morale.

When work tolerance has progressed satisfactorily, an attempt is made to give the patient work to do which simulates his own job as closely as possible. There is a complete equipment of machinist's tools. A Ford motor can be worked on by auto repair men. Sand pits are available for laborers and logs may be sawed with a bucksaw.

When patients have reached their work tolerance, they are allowed to rest. Recreation is provided in the form of billiards, horseshoes, darts and the like. These games are also used as a form of recreational therapy, the patient being instructed in the playing of these games to use the injured member so as to hasten the restoration of function.

Everything possible is done to keep the patient's

mind off himself. The success of occupational therapy depends upon its ability to maintain interest. An interested patient is an enthusiastic patient and only by such enthusiasm can we hope to overcome the physical and mental handicaps imposed by injury. An injured cabinet maker may be surprised at a bit of cabinet work turned out by an inexperienced laborer with a more serious handicap than his. As badly off as he thinks he is, this is a challenge to his pride and it is not long before he is demonstrating how cabinet work should be done. Unwittingly he cures himself, both physically and mentally. It does not take such persons long to realize that if they can do the work in the workshop they can do their own work. The opportunity to demonstrate to themselves that they can work despite their handicap is all many patients need to get them back to work.

All patients who enter the Center do so voluntarily and only with the recommendation or consent of their attending physician. There is no direct control over the patients, in that they may accept or reject treatment at the Center, or discontinue treat-

ment if they so desire. The patients report daily and are expected to spend the greater part of the day at the Center. Hotel accommodations are provided for the out-of-town cases and transportation is furnished for the local cases who cannot travel by street-car. Dinner is provided in a nearby restaurant for all patients. The progress of one neurotic woman was clearly shown by the increasing cost of her meals.

Although the Center has been in operation only seven months and is still in the experimental stage, we are highly gratified by our results to date. It seems highly probable that the care of the industrially disabled can be vastly improved in our larger hospitals if there is added to the physical therapy departments an efficiently conducted work therapy department. Both departments must, however, be supervised by interested and trained medical personnel, who must check the admission diagnosis and the progress of each patient. Success of such an undertaking thus depends entirely on the interest shown by all concerned in the patient's welfare.

Excerpts from Letters Commending Occupational Therapy Work.

The following are excerpts of letters from two top men in the field of Occupational Therapy in the armed forces, congratulating the Philadelphia Art Center for its efforts in coordinating its exhibition to be held from April 17 to May 30, at the Philadelphia Art Alliance:

"Throughout the Convalescent-Rehabilitation Training Program of the Army Air Forces hospitals the useful techniques of Occupational Therapy have been adapted to military needs. Weaving, long a stand-by of Occupational Therapy, has been converted to the making of individual camouflage nets. Special frames permit the soldier-convalescent to make these nets while still a bed patient.

"Wood carving, another forte of Occupational Therapy, finds its counterpart among Air Forces patients in the construction of model planes, tanks, ships and accessories for sand tables or strategy

maps. Knot tying has taken on an added significance when the patients are taught commando tricks and life saving values in square knots, bowlines, and sheephanks. The assembling and disassembling of radios, electrical appliances and Morse Code sets combine with the above to show how Occupational Therapy has 'gone to war' in the hospitals of the Army Air Forces."

"Unquestionably, Occupational Therapy is the most fruitful psychiatric treatment adjunct."

"In mental disorders in which there is much pre-occupation and the dangerous courting of unreality, the products of occupational therapy become symbols of actual flesh and blood life, wholesome contrasts to the still intangible and unsubstantial fantasies. In the large group of psychoneurotic patients, occupation tends to displace the morbid introspections and anxieties which characterize neurotic escapes from the realities of life and the work becomes a hostage to the reality to which it is hoped the patients will be returned."

THE CURATIVE WORKSHOP

BELL GREVE, DIRECTOR
Association for Crippled and Disabled,
Cleveland, Ohio.

It is no longer necessary to present arguments to prove that men, women and children with, or who have had, disabilities and who have had advantages of complete rehabilitation services are better equipped for the demands of every day life. I feel, throughout the nation, such men and women have and are replacing men and women as they are called for military services, in industry and on the home front. The efforts of the Crippled Children's Program and the services of the Bureau of Vocational Rehabilitation are definitely bearing fruit. However, no one knows yet how much manpower is lost or is chained to beds and wheelchairs because the man and some one or several special rehabilitation services have not been brought together. The last Congress was wise when it amended the old Vocational Rehabilitation Act so as to include provisions for physical rehabilitation services as well as for vocational rehabilitation.

Every state in the United States is analyzing all present facilities for rehabilitation which exist within the state and for rehabilitation in the broadest possible sense. Rehabilitation is no longer a local affair for the adolescent or the adult, but now has state-wide and national importance. Thousands and thousands of patients with disabilities are treated in hospitals and sanatoria throughout the United States, in which occupational therapy and physical therapy services do not exist. That is understandable and will always be true to some extent. However, the patterns which have been developed for crippled children and vocational training can be easily followed. If special services do not exist at home the patient should be taken to the nearest facilities. Adequate service should exist somewhere in every state and be readily and easily available. There are few occupational therapists and physical therapists in rural communities and such services are inadequate in most urban centers. Because of the new rehabilitation law it will be necessary for all states to develop parts of its rehabilitation program. The questions which are raised in many places are: "What particular use?" "To what extent?" "Where?" "How many, etc.?" "When" is

seldom asked. Everyone knows that *now* is the time. No state has had an adequate program in the past. Now is the time to face frankly lacks and gaps in the state-wide program and make plans for the meeting of those needs. No state wants to wait until all the problems of post-war are fully upon a community. Problems of the returned veteran and the disabled industrial worker—problems of rehabilitation are in every community now. The post-war will only intensify them. Everything will be much easier if adequate facilities are in existence and actually being used, if mistakes have been corrected, if procedures and policies have been worked out and if social and health agencies, doctors, and nurses know what can be done, where and under what conditions.

A CURATIVE WORK SHOP IS NECESSARY IN EVERY STATE. Conditions may be such that several such shops are needed. Complete rehabilitation is no one special service. It is a combination of special services including adequate diagnosis and medical treatment. Occupational therapy, physical therapy, speech therapy, special education, vocational guidance, vocational training, and frequently special placement. All of these services can be used at the same time and the use of all may not be necessary in every case. What is to be accomplished in one, often depends on what has been accomplished in another, nor can all services be secured in the same place. Although it is best for the patient to have as much done as possible in as few places as possible, common sense indicates that all professional staff in every special service should understand and appreciate the value of the other specialties and the part each plays in the complete rehabilitation program. Without such understanding the patient always loses. It is important, that any lack of appreciation of the value of each and every specialty in rehabilitation be corrected immediately.

A Curative Work Shop is exactly what its name implies—a place of cure in shop environment. A Community Curative Work Shop rarely has a hospital atmosphere and today more and more Curative Shops are installed, with more and more actual shops

practices. Occupational therapists work closely with industrial doctors and rehabilitation agencies so that the future employment or training plan is well known to the therapist while she is treating the case.

Curative Shops in hospitals and sanatoria should be thoroughly familiar with the activities in the community. Curative Work Shops should be free to offer suggestions regarding program and procedure in such a Shop because there must be an easy avenue for the transfer of patients from one to the other and a continuation of the rehabilitation program. Frequently physical therapy alone exists in a hospital and the physical therapist should be in close touch with the Curative Work Shop because such a shop is often a necessary and needed adjunct to the physical therapy program. Both physical therapy and occupational therapy should be established treatments in a community Curative Work Shop, particularly as patients are found under the New Rehabilitation Law and will be brought to the Community Curative Work Shop for treatments and Vocational Analysis when it is found that hospitalization is not necessary, or when the services of such a shop are necessary for the development of a rehabilitation program following hospitalization.

A Curative Work Shop is an interesting place. It is *not* a hospital. It is an arm of many. It is not an industry, yet serves industry by preparing men and women for jobs. It is *not* a school, yet helps rehabilitation officers in determining the vocational training which is best for the person in question. A Curative Work Shop is always under medical supervision, yet constantly appreciates the fact that medical treatment is only one part of the whole plan.

Individuals pass through the Curative Work Shop with a full knowledge of their physical capabilities and limitations and with an emotional balance toward their permanent physical condition. There is a satisfaction in knowing that all which is possible from the point of view of physical rehabilitation has been done, and should be a pretty well defined plan regarding re-employment or vocational training.

It takes time to arrive at these conclusions. There must be individual analysis and individual planning. The occupational therapist in the community Curative Work Shop in addition to being the specialist giving treatment as prescribed by the doctor, is frequently, in fact more often, the tool used by a health or social agency which has the responsibility for the case in helping to work out a permanent life

plan. The occupational therapist should play a part in making this life plan. Her contribution is of tremendous value because she sees day by day the patient's reactions, physical, vocational and mental.

In Toronto, patients come to the Curative Work Shop from various sections of Canada. They live in boarding homes while in attendance at the Shop. The plan seems such a simple one and no doubt will be used more and more in the United States, particularly as states decide to have better shops and fewer of them. In Mexico, the plans for the development of rehabilitation services throughout the nation call for a larger Curative Work Shop or Rehabilitation Center in which the majority of patients will live in the city either in their own homes or in approved boarding homes. No one knows what plans will be worked out in war torn countries where there is such great need of rehabilitation for civilians and veterans. Evidently services now in existence will be studied and evaluated wherever they are. It would seem that a Community Curative Shop would help the hospital program by releasing beds earlier, and would also serve those who would benefit by therapeutic treatments while they are having vocational analysis and who do not need hospitalization.

For several years, I have felt that a Community Curative Work Shop should open its doors to various types of disabilities, the arrested tuberculosis patient and cardiac as well as orthopedic; in fact, to anyone with a disability for whom the doctor can make a recommendation. Yes, in every disability there should be a vocational plan whenever necessary so that the occupational therapist can use in treatment, whenever possible, that activity which is in line with the vocational field. For example: An arrested tuberculosis patient leaves a sanatorium in which rehabilitation has been started by the occupational therapist and a vocational plan has been outlined by the State Rehabilitation Agent. The doctor prescribed occupational therapy in the Curative Work Shop three times a week, two hours a day. Future training will be in the commercial field. It is sensible for the occupational therapist to provide activities in that field while the patient is under treatment. It is wise to have a medical advisory committee for each disability so that at all times the program in the Curative Shop is under medical supervision.

Occupational therapy in a Community Curative

Work Shop is a combination of carefully thought-out activities in various fields—arts and crafts, sports and recreation, industry and vocational. As the Shop develops, so will these activities develop, and change from time to time; probably more so in a curative shop in a community than the one in the hospital or sanatorium. No activity should ever be used for the sake of activity. The patient is the product first, last and always. The State Rehabilitation Agent should find the Curative Work Shop his greatest asset. He should know what performances are necessary on various jobs—how much bending, stretching, lifting is necessary—what are the conditions of work, hours, light, heat, drafts, stairs, etc. All this information should be transmitted by him to the occupational therapist in the Curative Work Shop at the time the patient enters the Shop. It does not change the prescription given by the doctor, it helps the occupational therapist in choosing the type of occupational therapy activity to be used by the patient while under treatment.

Yes, the Community Curative Work Shop will be more and more valuable as case finding develops. Persons will continue to be injured in industry. In the last bulletin issued by the Curative Work Shop of Milwaukee we are told that of 560 patients engaged in vital war production, 224 continued work while receiving treatment and 300 were rehabilitated back to the same jobs, 24 returned to work that was adjusted because of injuries and only 12 were unable to return to work. The American Public Welfare Association is stressing rehabilitation on a national level and urging administrators of public relief and public assistance programs to analyze all persons with disabilities receiving assistance from the point of view of possible rehabilitation, physically, emotionally, or vocationally. The Public Assistance Department of Pennsylvania has recently

established an excellent program through the use of travel clinics for the analysis of recipients of relief. The case finding program of the Bureau of Vocational Rehabilitation will locate thousands of persons who were not eligible under the old law. Veterans with disabilities whether service connected or not, will be knocking on the doors of rehabilitation services.

A satisfactory complete state-wide rehabilitation service sees to it that all facilities exist which are necessary and are readily available. A great deal of thought should be given to the development of services for the homebound, particularly for those who with adequate physical rehabilitation service can be improved to the extent that they can leave their homes. If this home service is not possible in all sections on a state-wide basis then patients could be transported to the Curative Shop area and placed in carefully selected boarding homes where treatment could be furnished by home therapists working out of the Curative Work Shop, until the patient is able to come to the Shop. If Curative Work Shops could maintain transportation facilities, many persons now classified as homebound would be out of the home.

A Community Curative Work Shop might be the nucleus for a County Council on Community or Rehabilitation, or problems of the handicapped, and could be patterned after one of the National Committees. Public and private agencies on State and local level, special agencies for special types of disabilities, and representatives of special services in rehabilitation could plan together. Such a committee could be responsible for analyzing the existing facilities, for interpreting such facilities to the public at large, and for preparing a program for a meeting of lacks and gaps.

OCCUPATIONAL THERAPY IN TUBERCULOSIS TREATMENT

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Modern treatment of pulmonary tuberculosis has as its core a radical change in the patient's accustomed way of life. In place of a vertical, active routine which gives the invading bacilli further opportunity to multiply and spread, bed rest, comprising a continuously horizontal, physically relaxed regimen, is almost universally prescribed. This gives the natural defenses of the body maximum opportunity to cope with the invading parasite and thus check the disease. In selected cases, mechanical aids, such as pneumothorax and various forms of thoracic surgery are utilized, but rest remains the principle and the essence of treatment.

As many practicing physicians have observed, most patients have a childlike faith in chemotherapy, coupled with an utter indifference or even a hostility toward advice which may contain far more therapeutic reality than a drug prescription. This is peculiarly the case in prescribing for the tuberculous patient. For the brief interval of an acute illness, he might grudgingly consent to rest. However, the need to devote weeks and months to uninterrupted, prone bed rest is rejected by thousands of patients. Many of these patients had a prognosis, at the time of diagnosis, which gave promise of a capacity to cope with the disease. We are confronted, over and over, paradoxically on the one hand, with patients whose disease was diagnosed only when it had reached a far advanced stage but who have returned to useful lives because of their immediate and consistent cooperation with a competent physician. On the other hand, we see minimal cases whose inability or unwillingness to cooperate in treatment leads to their death from progressive disease. Voluntary discharge against medical advice is today the greatest medical flaw in the American sanatorium system. We shall control the spread of tuberculosis effectively only when we can induce a greater proportion of all patients to accept treatment for whatever period may be necessary to assure a lasting recovery.

When we examine the organization and treatment plans of those hospitals and sanatoria in which optimum cooperation of the tuberculous patient with his physician is achieved, we find, almost inevitably, one or more occupational therapists. Conversely, in those institutions where the attempt to control spread and to benefit the patient is most consistently defeated by the premature departure of patients against medical advice, we may look in vain for any registered occupational therapist. Is this correlation of occupational therapy and effective treatment real or merely apparent? What contribution can the occupational therapist make in the treatment of pulmonary tuberculosis?

Let us follow a modern occupational therapist during a part of her rounds. We observe, first of all, that she is no stranger to hospital ways but has been trained in curricula and clinical affiliations prescribed by the Council on Medical Education and Hospitals of the American Medical Association. In preparation for her work she has served apprenticeships in other hospitals under the direction of experienced therapists, carrying out the prescriptions of physicians in various applications of occupational therapy. In preparation for the patients whom she is now serving, she has read the medical records, has attended conferences called for staff instruction, has obtained the orders of the physician attending each case whom she is to serve.

Her first bedside call is on a recently admitted patient. Some physicians prescribe certain forms of occupational therapy for such patients; others use it only when the patient becomes afebrile. In this instance the doctor's problem is a young male who has led a very active life up to the moment of his pulmonary hemorrhage and who finds difficulty in adjusting to absolute bed rest and to the hospital regimen. At the physician's direction the therapist calls on this patient just long enough to explain some of the hospital services for which she is responsible. These include the operation of the patient's library, the radio broadcast and public address system, incoming and outgoing mails. Such services are in fact the means by which the therapist becomes acquainted with each patient under treat-

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ment. Without intrusion upon the doctor-patient relationship, she is able to observe the patient as a person as he responds to routine matters. Frequently she obtains by such means clues which help later when the physician indicates that the time is ripe to utilize them.

In this case, some of the causes for the patient's restlessness come to the surface in the first interview. This particular patient, unlike many of his fellows, does not care to read fiction. Underestimating the range of non-fiction books, he has formed virtually no reading habits save for occasional magazine articles. Of these, he has found some satisfaction in historical discussion, especially that which relates to the background of the World War.

The doctor's order is to assist the patient in achieving relaxation. Unless he is able to relax, he will probably make so little headway toward recovery that he will fail to see it through. Reading well-written history provides some readers with physical inactivity by means of a serene type of mental activity. It would bore others to the point of rebellion, cause elevation of temperature in still others. For this individual patient, it appears to hold possibilities. The therapist reports back to the physician at their regular conference period, suggesting definite treatment which he may approve or modify. In this case, she has suggested short daily intervals and brief, rather vivid historical sketches in book form. Not an habitual reader, the patient is inducted gradually into the reading habit.

Our therapist's second patient is a young woman who has turned the first corner in her battle with tuberculosis. After a very uncomfortable acute period, she has become almost entirely afebrile. Weight and appetite have improved. She feels so much better as to suggest that stage which some writers call "the false convalescence". If this patient's x-ray films told the same story as her sensations, she would be ready for discharge from the hospital. But the doctor's problem is to limit her physical activities long enough to consolidate the gains which his patient has made against her disease.

The therapist, who has observed this patient carefully, suggests crocheting a sweater. The pattern suggested is such that the project seems to move rapidly. Hence, the patient will have something to show for each hour the doctor has allowed. On the other hand, total completion of the sweater will take many weeks. For this interval, it will form one of

several small psychological tethers which help to retain the patient in the hospital.

Note that any needlewoman or craftworker might have taught this patient the stitches used and have purchased the yarn. Only the trained hospital worker, however, is likely to make the project a part of the treatment in which the physician is seeking the cooperation of his patient.

The next patient is a girl of high school age with whom her physician has driven a bargain. If she will continue on bed rest—even though temperature is down—he will allow her to begin the completion of her interrupted high school work. The therapist is responsible for the patient's time in carrying out this bargain, even though the supervision of study is conducted by a visiting teacher. Both teacher and therapist realize how the possession of a high school certificate will mean a better job a year hence and thus a better chance of avoiding reactivation. But the hospital-trained therapist knows, as the visiting teacher cannot be expected to know, the purpose and value of those extra weeks of bed treatment. On this occasion, the doctor and therapist have planned an extension of study allowance in order to encourage this patient whom the doctor is not quite ready to place on more strenuous physical activity.

The fourth patient meets the occupational therapist in the shop. He is a skilled mechanic, over forty, who has, thus far, cooperated in each step of treatment. Medically, the problem is: Will his sputum remain negative despite a collapse which was only relatively satisfactory, or will surgery be necessary in order to obtain a safe result? Economically, this man is the breadwinner for his family; his savings have been wiped out. He is very likely to go back to work against medical advice unless convinced that he is actually accomplishing something toward his recovery.

For this patient, the therapist has planned a woodworking project. For the physician she is obtaining objective evidence on whether the patient can tolerate graduated physical activity without a return of symptoms. The patient grins at the contrast between the precision lathe at which he worked and the simple woodworking equipment. But he is pleased with a returning steadiness of hand and the disappearance of a tremor which had alarmed him. A few weeks later he will be instructing a younger

patient in the use of the lathe, unaware that the occupational therapist has contrived a situation to take his mind off of his personal dilemma.

There are as many possible applications of occupational therapy in a tuberculosis institution as there are patients in the hospital. The principles to be applied, however, are as constant as those employed by the physician. Essentially, they involve the use of carefully selected occupations for hand or mind which are medically prescribed for the therapeutic objective sought by the physician. Orientation, relaxation, morale, mental hygiene, recreation, work-up and physical conditioning are but some of the usual medical objectives toward which the occupational therapist can make substantial contributions.

The cost of staffing and supplying an occupational therapy service is a fraction of the cost of prolonged re-treatments, often including surgery for patients who are unwilling or unable to accommodate themselves to hospitalization on first admission and who sign out against medical advice. The cost of vocational rehabilitation training after discharge is also, according to executives in that field,

substantially less for patients who have been conditioned to activities and habits by occupational therapy than that for patients lacking such preparation.

The proof of the pudding is that medical administrators in the tuberculosis field who have investigated the treatment values sketched in this article are in the market for trained occupational therapists to an extent which makes the demand greater than the supply. This shortage was noted even before the Army Medical Corps recognized the versatility of these workers. In view of this competition, some shrewd hospital executives are looking over current graduating classes during their year of clinical affiliations. Many of these senior students give more than a hint during this period of their adaptability to various types of treatment.

Such an article would be incomplete without appreciative acknowledgment to tuberculosis clinicians and administrators of the thoughtful and realistic teaching of occupational therapy students and the cooperative development of present uses of occupational therapy in tuberculosis treatment.

Conserve Waste Paper.

From the day a soldier goes to war, he is dependent on paper. From his draft card to his honorable discharge, his records are kept on it.

His records are packed in it; his cartridges are wrapped in it; his shoes are lined with it; his letters are written on it.

His barracks are built with paper wallboard, paper roofing, paper insulation.

He shoots at paper targets, eats from paper plates, drinks from paper cups.

His battles are planned, his orders are issued, on paper.

Literally, he lives, trains, travels and fights, with paper, his indispensable ally.

And, of course, his "honorable discharge" will be handed to him on a piece of paper—after a beaten Axis has signed the peace terms—on paper!

There is an abundance of waste paper in the home, the office, and the hospitals, much of which never reaches the mill.

No part of the war effort is more essential than the waste paper drive.

THE ROLE OF OCCUPATIONAL THERAPY IN A MENTAL HOSPITAL

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For many years, occupational therapy has been used in the treatment of persons suffering from mental disorders. Several different attitudes exist as to its place in the armamentarium of psychiatric treatment procedures. In some institutions the occupational therapy department functions for the production of articles needed about the hospital wards and elsewhere. In others it seems to exist for the purpose of permitting certain groups of skillful patients to earn money from the sale of their products. There are other institutions in which there is a combination of these two attitudes; the less valuable products are used by the institution; the more valuable ones are sold for the purpose of making the O. T. Department self-supporting or to improve the patient's financial condition. It is contended that for a patient to be able to make an article which has a sale value is a stimulus to increased effort and this is quite true, but frequently it has an undesirable feature in that it tends to cause the patient to become satisfied to remain indefinitely in the hospital. Another undesirable result is that many patients who could be benefited by occupational therapy are deprived of the benefits of this treatment because they do not produce usable articles.

When we think of occupational therapy as a therapeutic measure, we inquire (1) to what types of mental disorders is it applicable; (2) what results should be expected?

Before proceeding further, it would be well to differentiate between Occupational Therapy and Industrial Therapy.

When I speak of Industrial Therapy I mean the use of the skill and ability of the prolonged continued treatment patient in the various shops and other routine activities of the hospital, such as the machine shop, the carpenter shop, mattress and shoe repair, paint shop, on the farm and hospital grounds, etc. Patients engaged in these activities have become fairly well adjusted to hospital routine, and are much happier when occupied as indicated, but their thought content, emotional reactions, hallucinatory experiences, insight, etc., have not sufficiently

improved to warrant their being released from the hospital.

My concept of Occupational Therapy, and I include Recreational Therapy, is quite different. This is the use of the various arts and crafts and recreational activities in a definite effort to modify the behavior of the acutely psychotic patient.

In a recent printed communication from Major Merrill Moore, who is actively treating "the psychoneurosis of war" and "psychoses" somewhere in the South Pacific, he says: "I am using occupational therapy for the patients in the hospital in the mornings (basket work, leather work, shell work and other crafts) and trips and other diversions in the afternoons for patients who are able to go out. I try at all times to keep the patients quiet, busy and happy. I find them very cooperative and appreciative."

It is quite obvious that the physician has no desire to make leather workers, weavers, basket makers, etc., of his patients. Many of these crafts are sufficiently tedious to require the undivided attention of the patient. When this is accomplished he is for the time, at least, away from his disturbing thoughts and ideas. The depressed patient is diverted from his self-accusatory, nihilistic thoughts, and brought to see that he really can do something after all. The hyperactive, flighty, distractible patient is brought to a concentration on one thing and helped to stop flitting from this to that. Even though it may be made to last for only a short time, it is a step in the right direction. Even the destructive patient can at times be brought to see that his activities may be useful. The Schizophrenic patients may frequently be taught useful routines which take them away from their tendencies to become completely shut off from reality. The Senile patient may be made to feel useful by permitting him to knit, crochet, quilt, etc. I have seen the appearance of whole wards completely changed by deteriorated patients, scraping and repainting chairs, tables and beds.

The Occupational Therapist is the key person in this form of therapy. It must be taken for granted

that she has knowledge of the various technical procedures associated with the arts and crafts. But without the personality and ability to influence and lead patients to try, the therapy is defeated. She must be resourceful and tactful, quick to note any little display of interest shown by the patients.

Being frequently called upon to apply occupational therapy to patients who are also receiving various other forms of treatment, such as shock ther-

apy, she must know about the various things that may happen in these cases.

Occupational therapy is a psychiatric procedure which no well-organized mental hospital can afford to be without. It tends to promote recovery, mobilize the total assets of the patient, prevent deterioration and the development of artefacts, create new and beneficial habits, and promote rehabilitation and a return of self-confidence.

Exhibition of "Occupational Therapy in War and Peace".

The country's most representative exhibition of "Occupational Therapy in War and Peace" will be staged at the Philadelphia Art Alliance from April 17 to May 30, it is announced by John F. Lewis, Jr., president. Mrs. Franklin D. Roosevelt will officially inaugurate the exhibition, which was formed in cooperation with the hospitals of the U. S. Armed Forces.

This exhibition, formed by the Art Alliance, will be the possessor of several distinctions. It will be the first large exhibition of Occupational Therapy or "Cure Thru Work" ever staged in Philadelphia. And it will be the first showing of the therapeutic work among the disabled members of the Army, Navy and Air Force ever combined anywhere. Regular demonstrations by actual Occupational Therapy patients will be given for the benefit of the visiting public in the various rooms of the Art Alliance. In addition, several afternoon and evening events during April and May will treat the many facets of the subject.

One gallery will house a model Occupational Therapy shop as might be found in a civilian hospital, with finished and unfinished handicraft on view. Visitors will be permitted to try their hand at the weaving looms, block printing, sketching, cord knotting, rug hooking and woodcarving. Incapacitated

patients will demonstrate in this shop every Saturday afternoon.

In another gallery of the Art Alliance, which will be set up as a Functional Shop, service patients from the Valley Forge General and the U. S. Naval Hospital, will demonstrate the crafts which introduce exercise. These demonstrations will be held on Tuesday afternoons.

The Art Alliance's regular Decorator's Gallery will be converted into a modern living room whose entire furniture and furnishings have been constructed by Occupational Therapy patients in Army, Navy and civilian institutions. These furnishings will include curtains, upholstery, carved chairs, game tables, a modern chest table, rugs, bookends, ashtrays, lamps and wall paintings.

Other exhibitions will feature Occupational Therapy working materials, finished products, large photographs of patients at work and of their progress, and civilian-made articles for sale.

During the six weeks, all of the Art Alliance events will center about Occupational Therapy. These will take in Army and Navy technical discussions, talks on "Design in Salvage", "Music Therapy", "Creative Stitchery", "Group Occupational Therapy in Group Psychotherapy", "Occupational Therapy in the Pacific Area", "Rhythmic Exercises for Amputees", and three films from the British Information Service.

THE OCCUPATIONAL THERAPIST AND THE PROBLEMS OF PRODUCING HER

SUE P. HURT, O.T.R.,

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Since occupational therapy is a tool in the hands of the physician, its value depends upon his skill in using it. Today it is increasingly important that he be aware of the growing concept of the use of this tool and of the processes that go into its making. You who have used it and are using it have brought it from a pastime to a prescription and are finding it also a means of diagnosis.

As the concept of psychosomatic medicine grows, the values in occupational therapy become more obvious. It is a means at your command for study of the effect of mind on body, and body on mind, and for treating both, one through the other. Since occupation, or activity, is essential to every phase of life—to physical health, to mental balance, to social adjustment, and to economic status—and to growth and development in all, occupational therapy, or treatment through activity, offers itself as the most normal method of approach to deviations, both for purposes of study and of treatment.

Because there is so much that can be done with this tool, occupational therapy, the training and preparation of its personification, the occupational therapist, is vitally important. As our vision of its usefulness widens, the problem of training the therapist to fulfill its potentialities becomes increasingly difficult. She must be prepared to work with children, with adults, or with that difficult in-between stage; to work with people of all races and educational levels; to work with them in groups or as individuals. It may be for the purpose of recreation; it may be for specifically applied treatment, mental or physical; it may be for the purpose of discovering abilities and interests; or for promoting serious study and training. For all this she must have a basic understanding of the normal individual, his physical body and his physical and mental processes, and an understanding of his development and functioning in society. She must have a knowledge of the pathological conditions which may befall him and which may affect primarily his physical or his mental make-up, but which may, and often

do, spread to both, and she must have insight into the effect of these conditions upon his functioning in society. She must be aware of the particular problems confronting the individual in each field of disability—the orthopedically handicapped, the tuberculous, the cardiac, the blind, the deaf, and the psychiatric deviate; of the resources that exist to meet these problems; of occupational therapy's potential contributions in each field, and of its place in the coordinated program. And, besides all this, she must have techniques with which to work, for they are her means of approach, the physician's means of diagnosis, and her means of carrying out the physician's prescription and treatment. Since occupational therapy is "any activity, physical or mental, prescribed by the physician and administered by the trained technician," the techniques needed include not only the traditional handicrafts, but the so-called recreational activities—sports, games, dances, dramatics, and music; and also activities of pre-vocational value, such as mechanical drawing, typing, gardening, and shop work. Moreover, she must know how to adapt these to the results desired and to the conditions under which they must be administered. She must be adequately prepared to coordinate her treatment with the total treatment program through the medium of prescription, records, and report.

This article is not intended to give specific information regarding required basic training. Since the American Medical Association sets the standards for training, this information is available to you periodically through its *Journal*, having appeared last in the issue of June 19, 1943. Neither will space be taken to give the rapidly growing list of schools. The American Medical Association examines and accredits schools and also publishes this information periodically, the last list appearing in the same issue as noted above. Since 1940, the number of schools has increased from five to more than twenty. Others have been accredited since the last listing, among them our Virginia school, located at

the Richmond Professional Institute, the only accredited school in the South at this writing. It is expected that the next list of approved schools will appear in the hospital number of the *Journal* for March 25, 1944. Rather, this is an attempt to discuss the problems of training, the difficulties we are facing in our training programs, and to ask your help in meeting them.

There are three courses being offered which prepare students for registration with the American Occupational Therapy Association:

A three-year certificate program with a prerequisite of one year of college or its equivalent;

A two-year program for the college or professional graduate; and

A five-year degree program with a prerequisite of high school graduation.

All these courses have been accelerated by utilizing summer periods, so that the three-year course may be taken in twenty-seven months, the two-year course in sixteen months, and the five-year course in a proportionately shorter time, depending upon stops for vacation. At least eight months of any program is taken in clinical training in hospitals, the remaining time being spent in the study of theories and techniques. The schools attempt to give basic training for all fields; the hospitals (General, Mental, Orthopedic, Tuberculosis, and Children's) give the specific information, training, and application required in each field. We have a big task to perform in a very short time.

We occupational therapists need one sort of background if we are to work successfully with children, and we are missing a wonderful opportunity to help the handicapped child if we do not have it; we need quite another for working with industrial injuries, and if we could have been more thorough in this background, we should have sold ourselves long ago in this very obvious field for treatment by occupation; we need still another background for work with the newly blinded—we have done little of this as yet, but our place in this field will find emphasis with war casualties; and with the newly deafened—also to be developed with war casualties; and we need yet another approach if we are to fit into the rapidly developing program of rehabilitation for the tuberculous; and, again, we need increased emphasis on psychiatric preparation for work in that important field. We are turning out people with a basic preparation for all, but admittedly they

cannot be well prepared in any. You have found specialization necessary in medicine; we are finding it necessary in occupational therapy. So far it has had to be specialization on the job for us with our days already full to overflowing with routine, as it has been the exceptional department that has not been understaffed, and even the exceptional department no longer exists today. In spite of this, many have done unbelievably good jobs, and have helped to enlarge the concept of occupational therapy's value. We need you to help us think through this problem of adequate preparation. Is it possible to specialize on the undergraduate level? Or do we, as is the case in medicine, require the same basic training for all fields with specialization superimposed? If it must be the latter, doesn't this depend upon our greater recognition by the medical profession, with remuneration necessary for adequate preparation?

The following quotation seems a fitting ending to problems of training in this field. It is taken from a recent report of a survey made by the Professional and Technical Division, Bureau of Training, War Manpower Commission, on the facilities for training occupational and physical therapists. It has been quoted in the *Journal of the American Medical Association* of November 6, 1943, under "Current Comment": "Perhaps the deepest impression gained from this survey of physical and occupational therapy schools is one of admiration for the splendid pioneer work of the older schools in the face of half-hearted appreciation and support of the medical profession generally, and only the vaguest knowledge of their importance by the lay public. The first approved schools have steadily raised their professional standing, extended the range and quality of their courses (especially in medical subjects) and proven beyond all doubt the indispensable nature of their services to the medical profession. Indeed, thoughtful observers are deeply convinced, and the war will drive home this point with increasing power, that the medical school or hospital which does not now take active measures to provide these services will some day be awakened to the fact that certain features of the magnificent procession of health have moved past while they were unaware of their presence and unmindful of their significance."

I hope I may be forgiven what may seem to some as tactlessness in using this quotation when I am the guest of your journalistic hospitality. I do so,

realizing that physicians are busy people who do not always find it possible to stop long enough to take stock of a new form of treatment which is there for the using, but also realizing that those of you who have taken stock of the potential value of occupational therapy have found in it a vital medium

of approach to problems of diagnosis and treatment, and have helped it to grow to further fields of usefulness. And I do so because, while we have much to offer today in the total program of Rehabilitation, we are tools in the hands of the physician, and it is you who must use us.

The War-Time Graduate Medical Meetings

Is a movement held under the auspices of the American Medical Association, the American College of Physicians and the American College of Surgeons. It is not exclusively a service affair, as civilian doctors are invited to attend and participate in the program.

The April meetings convenient to Virginia doctors are:

FORT BELVOIR, VIRGINIA

- April 3—Traumatic Surgery of the Abdomen—Capt. Joseph E. Hamilton.
- April 10—Peripheral Nerve Injuries—Major Barnes Woodhall.
- April 17—Diagnosis and Treatment of Shock—Lt. Col. D. B. Kendrick, Jr.*
- April 24—New Chemotherapeutic Agents and Their Uses in Practice—Dr. Harry F. Dowling.*

NORFOLK NAVAL HOSPITAL, PORTSMOUTH, VA.

- April 12—Newer Drugs and Their Uses in Practice—Major Paul L. McLain.*
- April 26—Peripheral Nerve Injuries—Dr. Claude C. Coleman.*

ASHFORD GENERAL HOSPITAL, WHITE SULPHUR SPRINGS, W. VA.

- April 3—Allergy with Special Reference to Asthma—Dr. Oscar Swineford, Jr.
- April 10—Arthritis—Dr. Ralph Pemberton.

LANGLEY FIELD, VIRGINIA

- April 4—Psychiatric Problems in Military Service—Dr. John A. Rose.*
- April 11—Military Surgery—Col. Daniel L. Borden.
- April 18—Treatment of Trauma to the Chest—Major Leonard Bush.

- April 25—Aviation Medicine, General—Dr. Ludwig Lederer.

CAMP PICKETT, VIRGINIA

- April 6—Respiratory Diseases and Their Modern Treatment—Dr. Porter P. Vinson.
- April 12—Prevention and Treatment of Wound Infections—Lt. Col. Harlan H. Taylor.*
- April 14—Shock and Burns—Lt. Comdr. Arthur James Mourot.*
- April 19—Traumatic Surgery of the Abdomen—Lt. Col. W. R. Galbreath.*
- April 21—War Wounds of the Genito-Urinary Tract—Major William Bisher.

WOODROW WILSON GENERAL HOSPITAL, STAUNTON, VA.

- April 6—Prevention and Treatment of Wound Infections—Dr. William H. Parker.
- April 13—Drainage of the Pleura with Particular Relation to Chest Injuries—Dr. I. A. Bigger.

CAMP LEE, VIRGINIA

- April 6—Laboratory Aspects of Tropical Diseases—Dr. J. H. Scherer.*
- April 14—Malaria (Clinical Manifestations and Therapy)—Dr. Carlton J. Casey.
- April 21—Plastic and Maxillo-facial Surgery—Dr. Guy Harrison.*
- April 28—Respiratory Diseases and Their Treatment by Chemotherapeutic Agents — Capt. Paul S. Strong.

FORT EUSTIS, VIRGINIA

- April 13—Amputations—Upper and Lower Extremities—Comdr. H. C. Felt.*
- April 27—Psychosomatic Medicine — Dr. Louis A. Schwartz.*

*Acceptances have not as yet been received from these speakers. However, the dates and subjects are definite.

THE ROLE OF PSYCHIATRY IN ALCOHOLISM*

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and

VICTORIA CRANFORD,

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Tonight, in discussing the role of psychiatry in alcoholism, I want to talk over with you, in an informal way, some of my thoughts and feelings which have resulted from many years of working with this problem.

You may not all agree with me, and some may disagree, but I hope that none of you will think I am being dogmatic. I have no "platform". My intention is merely to discuss the whole problem in a necessarily brief, general, academic way, submitting some theoretical deductions and suggestions; then to report on a few practical working methods of treatment, and to offer several recommendations which those of us who are actively interested in alcoholism feel would be of benefit if acted upon.

Much of the material that we have on alcoholism is the result of the cooperative pooling of experience. Major Merrill Moore, Research Director of the Washingtonian Hospital in Boston, who is now on active duty in the South Pacific, has been one of our most valued workers and has immeasurably aided us all. I am personally indebted to him, not only for his contributions but for his never-failing stimulative and fruitful discussions.

I am also appreciative of comments made by many patients who have, at different times, talked over with me the various angles of this problem and given me their views. Last week I read this paper in its preliminary form to my colleagues at the Henry Phipps Psychiatric Clinic of the Johns Hopkins Hospital, and their more objective comments were most helpful. And, finally, I must thank Miss Victoria Cranford, my associate psychotherapist, who collaborated with me in writing this paper.

As you all know, this problem of alcoholism is now being studied in different parts of the country. We have the Research Council on Alcohol Problems,

the physiology department at the Albany Medical College under Dr. H. E. Himwich, a few treatment hospitals—notably, the Washingtonian Hospital in Boston, where Major Merrill Moore has done splendid work both in research and practical results. In New York this winter there has been a series of monthly meetings held jointly by the various New York psychiatric societies in conjunction with members of the Research Council who are actively interested in treatment. Recently there was a survey on the cost of alcoholism to the community made by the Buffalo Council of Social Agencies, which, so far as I know, has not been officially reported. And we have lay groups, such as Alcoholics Anonymous, etc.

But, although the problem of alcoholism is now recognized and being attacked, this attack is not yet organized on a nation-wide basis, nor is the public fully aware of its serious importance, nor that it is actually symptomatic of underlying psychiatric disorders which require medical and psychiatric aid.

Our feeling is, therefore, that the role of psychiatry at the present time is to treat alcoholic individuals who come to us for help; and to educate them and those associated with them to the fact that alcoholism is not a dissipation but evidence of illness; and also to try to prevent alcoholism—as distinguished from social drinking. To do this we must know a little about the possible causes, or factors, both in the individual's make-up and in the broad life-situations in which he finds himself, that, on investigation, seem to have helped in the development of alcoholism.

I am going to start at the beginning with one psychiatric definition of an alcoholic. I shall then discuss the problem briefly, suggest some factors and influences, report on the present practical methods of treatment, discuss the role of social service workers, and give you some recommendations.

Now, an alcoholic is one who cannot handle alco-

*Read at a public meeting of the Joint Conference of the Mental Hygiene Society of Virginia and the Virginia Conference of Social Work in Roanoke, April, 1943.

hol in any form. It poisons him, so that with the first sip he loses control and will continue drinking (over a long or short period of time) until he is in jams of one or another sort, and his important life activities are interfered with or disrupted. Our colloquial language is rich in phrases describing this fact: "No longer himself" ; "under the influence"; "a drunken fool"; "acts like a crazy man when he has drink in him", etc.

A man or woman with such an alcohol problem is not necessarily a bum, or drunkard, but is rather to be thought of as a sick individual, poisoned by a drug, who needs help, first, to get over the effects of alcohol; and, secondly, to learn how to live without the need of alcohol as a conscious or subconscious escape or narcotizer. He learns this, along with other aids, by recognizing that alcohol for him is no escape out of difficult situations but a toboggan-slide into more difficult ones. In this connection, I want to mention the psychological facts of early upbringing—conscience, remorse, guilt, fear of losing prestige, sense of failure and of moral weakness, all of which often act as cat-of-nine-tails to the individual in his thinking, so that, in despair and flight, he then drinks to escape *from himself*, and continues until either he, or his family, or friends, or business associates can no longer put up with his drinking and behavior, and aid is sought. One of the present difficulties in the successful treatment of the alcoholic is that help is so rarely asked for until the problem is desperately serious, with or without organic changes. I shall speak later on of the need for prevention of, and early detection of, alcoholism as part of social service work and of Mental Hygiene.

We feel that no one can deny that there is an alcohol problem in our country. Our State hospitals report a high percentage of alcoholism in first admissions. In recent years the insurance companies have also reported that they have been forced to refuse insurance to more individuals than formerly, due to alcoholism. From first-hand experience, we feel it to be a major problem in the community, constituting a sixth column in demoralized living, with all the ramifications from broken lives to broken homes, with demands upon Childrens' Aid Bureaus, Family Welfare Associations, the Penal System, etc. According to unpublished reports of investigators and management, it is a sixth column in war-plant absenteeism. In many cases when gen-

eral psychiatric help is sought, alcoholism is definitely in the background—from problem children to men and women with agitated depressions, whose association over a period of time with an alcoholic helped cause the personality-break to later strains and griefs of life.

I have now under my care a 48 year old woman whose husband was alcoholic, from whom she separated for ten years due to this. She supported herself and three children, of whom the oldest is now twenty. Five years ago her mother—to whom she was much attached—died. Two years later my patient took a job as housekeeper and companion for a middle-aged couple who, after serious illnesses, died the following spring, within a short time of each other. Four months later her husband asked to be allowed "to come back", promised to abstain, did not abstain, but was nursed along for a year by his wife, with constant emotional strains resulting from the childrens' attitude toward their father, violent quarrels, threats, etc. In September of last year my patient was ill with bronchitis following an eye operation necessitated by a blood clot. The husband—still drinking heavily—took in boarders while she was ill, insisting that she take care of them. Two months of this, with the husband's continued drinking, resulted in suicidal thoughts and a deep depression with agitation. This patient had previously, fifteen years before, gone through a similar, non-hospitalized emotional illness prior to the decision to separate from her husband.

We all know of many other cases in which drinking was, if not a major cause, at least some factor in equally serious situations that required state or local aid and outlay of time, money and work. It would seem, therefore, that organized, vigorous methods of dealing with the prevention of alcoholism on a large scale and on a fundamental basis are urgently needed at this time, and should be considered no less vital to the nation's well-being than the control of syphilis, cancer, and T.B.

Intelligently and practically to tackle this problem we have to try to understand the causes. "Why do people drink?" Excluding the psychotic, feeble-minded, schizophrenic and out-and-out psychopaths, individuals who use alcohol to "excess" appear to be attempting to escape from life-situations they cannot handle or be in harmony with, and to relieve various emotional combinations with features of anxiety, depression, restlessness, etc.

With the constitutional, individual background in mind, and never lost sight of, it may be profitable to explore a little into the general environment. Now, I think we will all agree that we are living today in a most difficult period of enormous emotional strain and drain. We are presented on all sides with a chaos of cultures and civilizations in conflict, of which the war is the outcome and a part, but only a part and a result—even as we feel that alcoholism in the individual is the result of hidden conflicts and life situations which it is our job to dig into, or unjumble, and make liveable by interpretation, adjustment, and so on.

I shall not attempt to discuss "culture" as such—leaving that for others whose knowledge is far greater than mine; but it may prove helpful in the general consideration of this problem to suggest some of the more obvious but no less important tension and conflict-producing characteristics of our American culture and social structure. For clarity and brevity, I shall list those which we feel are important and integral in the genesis of *contemporary* alcoholism.

SOCIAL-ECONOMIC-POLITICAL INFLUENCES

1. Political "rationalistic" concepts of democracy, which resulted in the false belief that all men were, being created equal, equally endowed—not in terms of differentiation but in terms of the same.
2. Capitalism—parent and child of political equality, and the resulting competitive commerce which led to:
3. The premature expansion and industrialization of our country, and
4. International political and commercial alliances which, in the absence of any sort of traffic control, periodically resulted in various collisions and destructive wholesale smash-ups (wars and post-war depressions).
5. The factory age (bee-hive type existence) as fore-runner for totalitarianism.
6. Equal rights for various groups in theory only.
7. The idea that, primarily, money alone gave social success, economic security, and power.
8. Large-scale immigration.
9. We also seem to have an ambivalent attitude toward other nations, expressed on one hand by names-calling: "Wop", "Kike", "Frog", "Chink", etc.; and, on the other hand, by the traditional flocking of Americans to Europe and England for edu-

cation, in pursuit of "culture", and for social prestige. Since America is a young nation of many races, the inner and strain-producing significance of this attitude so far as our national stability is concerned, is roughly comparable to the emotional cross-currents in a home where there are—along with wanted and beloved children—unwanted or "rejected" adopted children.

MORE RECENT INFLUENCES

1. World War I, with its sharp complete destruction of established mores. Dadaism in Art, Sherwood Andersonism in literature, companionate marriage in the home, some socialism in the state, the monkey-trial in the church, and a social attitude towards life of "Eat, drink, and be merry, for tomorrow we die." One laughed at the good, the sober, and the industrious. Some felt that every woman had her price. Children were more trouble than they were worth, etc.

2. Emancipation of women, with subsequent deterioration of the family, fewer children, and so on. Also, smaller rented, not owned, dwelling places (the apartment house), which encouraged more one or two or no-children families.

3. Over-education along intellectual non-practical lines with a resulting social attitude of looking down on manual labor, and the pushing of individuals into intellectual activities they were not suited for. (All men are not equally endowed in terms of the same.) This over-education, "everyone needs a college diploma to get a job", was perhaps also activated by a *money-caste system* of power and social standing in which the go-getter managerial type was king, and the non-aggressive hand-worker beneath the bottom rung of the ladder.

4. Allied with over-education, increased school activities that took the children out of the home influence; and also took their influence out of the home.

5. Urbanization on a large scale.

6. The automobile and its influence, both on diverting what was left of the family away from the home, and on the human mind itself in terms of unaccustomed *speed*, which prevented assimilation of visual or bodily experiences. We may here mention again the rapid expansion of our country and the large mobile population units without fixed homes.

7. The can-opener.

8. Prohibition and its well-known results of widespread drinking by men and women of all ages and all social groups.

9. The movies as recreation (followed by the radio) usurping direct individual creative activities.

10. Advertising as a highly potent opinion-molding influence directed toward the "smart, streamlined modern" way of life, with an astounding emphasis on alcohol as a means to "gracious living". Even advertisements for soap flakes show the radiant hostess serving cocktails before the dinner is served, before the guests are bidden farewell, before she actually washes the dishes with the soap that is kind to her hands. And, of course, we are all familiar with the more direct beer and whiskey "ads".

11. Billboard posters of alcoholic beverages.

12. The mushroom growth of road-houses during and after prohibition, where not to order liquor was conspicuously unusual, and often meant poor service.

13. A predominant use of alcohol in the movies and in a matter-of-fact way; also, in detective stories and magazines, the output of which has greatly increased in recent years.

14. The social attitude, molded by the "ads", movies and light reading, that one could not entertain properly without serving drinks; and that one had to drink or be thought dull and never be invited anywhere.

15. Increasing speed of living with the 7:58 morning commuters' special as symbol of hectic preparations for the day; the fifteen minute drug-store counter lunch, etc.

Conflicts and pressures in our civilization and culture, in a world setting, which seem to help produce anxiety, fear, insecurity, and a sense of being trapped, may be summarized as:

The postwar depression, boom, the depression of 1929, the pre- and current New Deal social measures, the social-economic-political forces since before World War I up to the present, contributing to a general sense of impending war or doom, which again accelerated the "eat, drink and be merry" thinking on one hand, and, on the other, in some, a tragic sense of futility of living. A worldwide revolution with Asia at war in the 20's, 30's and 40's; the Spanish Civil War in the middle 30's; the German and Italian totalitarian states presented as a light out of darkness to answer their peoples' need

of secure foundations and a certain tomorrow.

Add now the constant radio broadcasts, inch-high black headlines—disaster bombarding us 24 hours a day; and it is not so hard to understand the emotional reactions of panic, fear, confusion, and insecurity that we feel have aided and abetted in preparing the *alcoholic-soil-personality of our times*.

These conflictual pressures and fears also produce in some temperaments an overt defiance to our culture, with its ambivalency, its false beliefs (emphasis on book learning, on all men being created equal—being the same—on money etc.), its manic behavior (speed, change), its hypocrisy (in the land of the free we have share-croppers, slums), its cruelty (the well-to-do eat seven-dollar dinners, while children in the next city block sleep five to a bed without supper). This defiance expresses itself sometimes in organized attack: Committees and Groups are formed to ameliorate certain conditions—the Milk Fund for Babies, National Sharecroppers Week, etc. But we find, more often, that the sensitive individual develops psychiatric disorders and/or alcoholism because of an inability to live at peace in such a culture and an inability to do anything constructively about it.

Those of us in daily contact with the problem of alcoholism to whom more and more appeals are coming for help, feel, from our experience and in contrast to earlier years, that alcoholism as a problem in America is alarmingly increased and prevalent.

In comparison with other countries, we know that Italy and Germany went through social upheavals, unrest, confusion, and so on, and came out with dictatorship as the answer. In England, where many social problems were attacked publicly for many years, Fleming reported in 1937 an eighty per cent decrease in arrests for alcoholism over a 25 year period, due, he felt, to:

1. Social legislation.

2. Labor receiving equal rights and equal responsibilities with capital and management.

3. Legislated restricted hours of sale of alcoholic beverages.

4. More diversion on an active participating level for the white collar and working groups.

5. Temperance Societies, active social service work with the individual and the family unit.

In our country we have in contrast:

1. Large, mobile population groups with no fam-

ily cohesion or tradition of residence, in addition to heterogeneity.

2. No marked social legislation until recently; no marked public disapproval of drunkenness.

3. Labor receiving "equal rights" but, as yet, not *equal responsibilities*, and little or no *political* representation.

4. No restricted hours of sale of alcoholic beverages except in some states.

5. Fewer socially *utilized* opportunities for diversion or creative recreation.

6. Due to Prohibition temperance societies are held either in ridicule or fear while our social service groups have, for the most part, limited their work to curative measures with acute alcohol problems.

We have now rather roughly, and vaguely, and diffusely indicated some of the background and foreground that we feel must be taken into consideration when dealing with the individual who has an alcohol problem. We have suggested that some definite external influences may help bring about situations that influence the development of some personalities so that they become alcoholics. But we must also remember that not everyone is, or will be, an alcoholic, and that today there appears to be developed, in some, an "alcoholic-soil-personality" which seems to be increasing in number.

Among the personality motivations, as such, often found in alcoholics, the following appear to be significant:

1. A self-pampering tendency, which reveals itself in a refusal to tolerate, even briefly, any unpleasant state of mind—boredom, sorrow, anger, disappointment, worry, depression, dissatisfaction, and feelings of inferiority or inadequacy. A childish demand for "I want what I want when I want it *because* I want it" perhaps expresses the attitude of many alcoholics towards life.

2. An instinctive urge for self-expression without the determination or staying powers to organize this urge into creative action.

3. A more than usual craving for emotional experiences which call for the removal of intellectual restraint.

4. Powerful hidden ambitions without the necessary resolve to take practical steps to attain them, with resultant discontent, irritability, depression, disgruntledness and general restlessness.

5. A tendency to flinch from the worries and responsibilities of life, and to seek escape from

reality by the easiest means available.

6. An unreasoning demand for constant happiness or excitement.

7. An insistent need for the feeling of self-confidence, self-importance, calm and poise that some obtain, temporarily, from alcohol.

From experience in recent months, I think it is important again to stress the enormous weight and conflict of daily life in this contemporary war-world, and also to emphasize the need to help the individual to live in this setting without alcohol, by interpreting him to himself.

In summary at this time, that part of the role of psychiatry which interprets the prevalence of alcoholism as a serious major health problem in America, definitely suggests that the personality addicted, or ready to be addicted, to alcohol is molded by three important forces of our present culture:

Group and individual insecurity in nearly all spheres of life, plus speed, plus quantity and quality of mobility of living.

Here one feels that psychiatry, in addition to treating the alcohol problem should aid in preventing the alcohol problem from developing. That is, to help remove the anxiety of an individual, and/or help him actually to understand himself in this culture through psychiatric study and therapy, distributive or deeper analysis, and cooperation with those interested in mental hygiene who will follow through on a practical basis.

Now, with an alcohol problem submitted or produced for discussion, let us take it from a present practical point of view. We have already to some extent gone into the general psychopathology of individuals who use alcohol abnormally, and also into some of the general psychodynamic implications. (I should like to mention here that almost any known psychopathological picture may come for help, presenting as the problem, chronic alcoholism.)

In treating the alcoholic—after the initial supportive therapy, which will be discussed briefly later—the therapist, by intensive, individual, continuous, sympathetic, non-aggressive contact attempts to uncover the underlying constellation of forces which produced "pent-up charges" of one or another type that necessitated the use of alcohol for narcotization, escape, or what have you. At this point I am going to quote from Wall, in order to emphasize some of the material already presented:

Basing his views on a study of 100 male patients admitted to Bloomingdale Hospital during a period of fourteen years, Wall attributes great importance to mother attachment, lack of ambition, and homosexuality, overt or latent, as factors in the alcoholic's make-up. In this connection he remarks: "In considering the relation of these patients to other members of their families, the mother attachment in thirty-seven individuals has been mentioned. Small families were fairly common; fourteen were only children; sixteen had only one other sibling; and naturally in these families the parent-child bond was strong. These patients from childhood were inclined to respect but fear the father.

"There was a surprising lack of ambition and well formulated plans for life work among them; sixty-five were individuals who had shown a tendency to drift through life, holding a position here and there, with no great responsibility or future possibilities of advancement. Among this particular number were eight who from adolescence had been inclined to be dishonest, the passing of worthless checks being the most common example. On the other hand, thirty-five were men of accomplishment. There were six physicians, six lawyers, five executives, three writers of distinction, and one from each of the other professions. Among the group were thirty-two college graduates, although not all of this number were accomplished.

"Concerning the psychosexual development of the alcoholic patient, much emphasis has been placed on homosexuality, particularly in the psychic sense. No one with psychiatric experience doubts its significance, and its manifestations in this group of men throw some light on the problem. There was a history of overt homosexuality in only eleven cases. From a physical and constitutional angle, it is of interest to note that only three of these eleven showed feminine make-up, while in the entire group, the feminine make-up occurred in only twelve. Material gleaned from these patients' histories points toward the psychogenic or environmental origin of homosexuality. Reference has been made to the mother attachment which was certainly fostered and encouraged by the thirty-seven typical mothers, and out of this situation there developed a feminine identification, a dynamic factor of determined force in leading to a feminine approach to life as observed in these unfortunate individuals. Their lack of mascu-

line security and aggression was obvious, oftentimes portrayed in a dramatized beaten attitude toward life in general. They were envious of successful males in their families and frequently admitted feelings of inferiority."

Studies by other contemporaries have led to the following conclusions:

Alcoholism is evidence of an escape from reality, of a maladjusted personality, of an intense urge for excitement, of a neurotic or psychotic reaction, of latent or overt homosexuality, or of self-destructive tendencies.

Basically and generally one feels that these interpretive conclusions verify the presence of anxiety, hostility and/or tension; and psychiatric probing by various methods may bring out as their cause:

1. Some early traumatic event.
2. Disturbing experiences at certain periods of life which the individual's personality was unable properly or satisfactorily to assimilate.
3. Identification and imitation (with case histories showing as many as four generations of alcoholics, where one of the parents was an abstainer, strait-laced and hostile to the child of the same sex).
4. Conflicts causing "pent-up charges" which require narcotizing either the anxiety itself, or the anxiety-controls.

In addition to the above discussed psychiatric study or analysis of an individual, psychotherapy uses ventilation, desensitization, psychiatric examination, interviews, direct personality studies, Rorschach ink-blot analysis, dreams, material from the family and business associates, the clergy, medical—including neurological—examination, electro-encephalography in some cases, word association, California personality inventory, Binet and Wechsler intelligence tests, and a discussion-analysis of daily ordinary experiences while under treatment.

From our experience, successful rehabilitation of patients with alcohol problems was accomplished by these seven factors:

1. Careful selection of patients, that is: voluntary patients with average or better intelligence, some level of emotional maturity, undamaged brains, with place of treatment depending on business, home and social contacts, etc.
2. Personality of the psychiatrist. We feel ideally that it is important for the psychiatrist to be a total abstainer.

3. Psychiatric analysis and therapy discussed above.

4. Interpersonal relationship of patient and therapist.

5. Suggestive influences.

6. Re-education: learning, under guidance and through third-person objectivity, to live along common-sense lines, with tolerance, control of emotional reactions, and views, attitudes and insight to deepen self-understanding.

7. Continuous follow-up by means of infrequent visits, correspondence, telephone calls—considered by the patient, family and associates as being of the most serious importance, similar to that of repeated pneumothorax for T.B. patients.

One must keep in mind that, due to the variability of behavior of patients with alcohol problems, one finds them waiting for help—or needing help—at home, in jail, in hotels, in the general hospital, in the modern psychiatric hospital, at a few special farm set-ups on the east coast of this country, in private medical or psychiatric alcohol hospitals, and in the State hospital.

With this in mind, one can easily see that there are many so-called psychiatric reactions, or reaction-types, in which alcohol has been an important factor. Some of these, by name only, are:

Acute pathological intoxication with stupor or excitement or convulsions; delirium tremens; acute and chronic alcoholic hallucinosis; marked paranoid development; Korsakow's syndrome; mental deterioration and dilapidation in the personality and intellectual spheres.

In recent years the pharmacologists and physiologists have helped us a great deal in the supportive treatment of the acute reaction.

Carbohydrates (in the form of glucose), salt, huge doses of thiamine chloride and insulin will, in most instances, like the wave of a wand, clear up the evidences of an acute condition. When injected intravenously, this has been called by some "The Philadelphia Cocktail". The New York group found that by injecting metrazol and producing no convulsions, they could, in a few hours, change a fighting lion-type alcoholic into the proverbial lamb. Benzedrine should be used only when slump-depressive psychopathology is present.

And from another point of view, there are indications that some help will perhaps be obtained

through the so-called conditioned reflex or "aversion" treatment, which should be considered at least as a temporizing aid in returning a man to work for a period of time.

Again summarizing, one might say at this point that an alcoholic, in this country, is partly a product of our culture; that he is a sick man; that he has an individual personality make-up, with intelligence, emotions, early hurts and memories, with likes and dislikes, and must be treated as an individual; that alcoholism is not a dissipation but a symptom of an underlying difficulty or illness. Finally, we suggest that treatment should consist of, first: from an academic point of view, helping produce a culture that will not develop a pre-alcoholic personality (the neurotic, partial psychopath, or pre-psychotic individual—or, a personality that will be primed to use alcohol. Secondly, from the distinctly practical point of view, treatment should consist of recognizing this pre-alcoholic personality and helping him get immediate help at some psychiatric hospital clinic or office.

Briefly to discuss the role of social service in this work, what does the social worker want from the psychiatrist?

From my experience, social workers first want to know what to do with the problem at hand. They then want to know the formulation of the situation in which alcoholism developed, some of the dynamics and practical methods of treatment, so that they can follow through as a major helpful force in rehabilitating the individual and aiding his family as well as those associated with him. The social worker should work with, not for, the psychiatrist.

What does the psychiatrist expect of the social worker?

We expect the social workers, because of their general activities in communal work and welfare and Mental Hygiene training, to aid in the prevention of alcoholism. Secondly, we expect the social workers to aid in educating the people to the fact that alcoholism is a symptom of an illness, that it is not a dissipation; and that an alcoholic is not to be punished but to be given medical and other help as is the individual who has T.B., cancer or syphilis.

We further expect our social workers to know where to go for help, and we are attempting—as soon as time permits and all groups cooperate—

to establish information centers in various sections of the country. And, finally, we want, and fully expect, the social worker to follow through in the treatment of the group hurt and harmed by the individual alcoholic.

Time does not permit us to go into various other important national and specific factors associated with alcoholism, such as the alcoholic at the Induction Center, in military service, in war-work absenteeism, etc. In all these instances it is a major, important problem and is added to the many usual situations in which alcoholism is an important element—from drunken driving to delinquency, crime and murder.

In this paper I have given some of my feelings, resulting from a number of years spent in attempting to aid individuals and their families who had gotten into serious and painful difficulty due to alcoholism. I am not a prohibitionist. I feel that perhaps some of the reasons for the good results obtained in England would be helpful if again looked into and studied. Alcoholism should, in my opinion, be considered as what it is: a national public health problem, and attacked as such, along lines similar to public health work on T.B., cancer and syphilis. Some small European countries had, for years prior to the present disastrous state of the world, handled it as a public health problem; and in those countries, like Sweden, Switzerland and Holland, with a tradition of heavy drinking as part of the social customs, alcoholism as such was reported to be controlled.

Again, if our culture could be re-oriented, through a unified Mental Hygiene and Public Health Campaign and broad follow-up, so that there would be less pressure, speed, hurry, worry, and confusion of goals; and if the sign-posts could again point to a stable, calmer way of living, with Home

and Church as cohesive elements needed by the social structure, it is possible that to a large measure the sense of general and specific insecurity and basic loneliness would diminish; and the American way of life would not help produce so many pre-neurotic, pre-psychotic and pre-alcoholic personalities.

When we make these statements we by no means intend to imply that here is the cure-all, nor the main method of re-orienting our culture, but that it is all part of the picture and cannot be excluded. We do not mean to imply that an altered, or modified, culture would be one in which no problems in individual life would ever arise, so that there would never be any psychiatric disorders. We do mean to imply that the various factors of our present-day culture aid and abet, to some extent, the development of the breaking of some personalities and the development of the problem—alcoholism.

In conclusion, I should also like to suggest that we feel, from a practical standpoint, the Commonwealth of Virginia could well serve its citizens by the following:

1. The establishing of an information center, associated with the Mental Hygiene clinic, for social workers to contact;
2. An acute psychopathic hospital, or a section of it, for the study of patients with alcohol problems who, after careful consideration, are not obviously hopeless;
3. A state hospital set-up for the treatment of certain patients with alcohol problems;
4. Extra-mural clinics, near the information center, for the treatment of some patients, and follow-up of others;
5. Farms, where compulsory or non-compulsory physical rehabilitation and social psychiatric help is used.

TUBERCULOSIS OF THE VULVA

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and

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Tuberculosis of the vulva is the rarest form of genital tuberculosis. Norris quotes the combined statistics of Geil, Mosler, Daurios, Schiller, and Martin to the effect that in 12,114 autopsies upon tuberculous women, genital tuberculosis was present in 215 subjects, but in none were the external genitals involved. According to Barnes the diagnosis is usually made at autopsy, probably because the lesions elsewhere in the body seem so much more important clinically that it is not looked for in the vulva. In over 6,000 gynecological specimens in the laboratory of gynecological pathology of the University of Pennsylvania, Norris found only two cases of tuberculosis of the vulva. Buckley who wrote exhaustively upon the subject in 1915 found only 71 cases reported in the literature in the thirty-four years since the first case was reported in 1881. With few exceptions the literature still consists of case reports and most of these are in foreign journals.

Although the rarity of the disease is its most striking feature, it, nevertheless, presents many interesting problems in diagnosis, pathogenesis, and treatment. Some ten or fifteen years ago tuberculosis of the vulva was frequently confused with esthiomene. It must be differentiated from various chronic lesions of the vulva, especially tertiary syphilis, granuloma inguinale, and cancer. The importance of the latter differentiation is stressed by Barrow and Maxwell if treatment by vulvectomy is contemplated, for in case of cancer the operation should be much more radical and should include the lymph nodes.

The vulval lesion may be either primary or secondary. The former is rarer and it is often difficult to prove that there is no tuberculosis elsewhere in the body. Anna Nordenskjöld in 1937 reported one case in a girl of 10 years which was associated with erythema nodosum. She collected 11 others in the literature, all but one being in children. Her fellow countryman, Hellerström, in the same year reported a primary case in a 22 year old seamstress which is not in her tabulation. Nor does she include Gaté and Michel's case, that of a 19 year

old young married woman who also had an associated erythema nodosum. In children the infection may be gotten from the floor or from the fingers of the attendant. In the latter event it is comparable to tuberculosis of the prepuce that used to follow ritualistic circumcisions when the operator himself had tuberculosis. In nubile women the question of contracting the disease by sexual intercourse has been much discussed. The rarity of primary lesions of the vulva and vagina is an argument against marital infection. Auerbach, who recently reported upon the postmortem examination of 571 females with tuberculosis, found no primary tuberculosis of the generative organs and doubts its occurrence. Another argument against this mode of infection is the difficulty of producing lesions of the vulva and vagina in laboratory animals. Jameson, however, has been successful in producing vaginal tuberculosis in guinea pigs by sensitizing the animals beforehand. Ten out of 11 guinea pigs that were treated with tampons soaked in a virulent strain of tuberculosis were positive to the tuberculin test, but tuberculous lesions were discovered in only 5, one cervical and 5 in the lymph nodules. A second series was run, using animals sensitized by inoculation in the axillary region. When vaginal inoculation was performed in these animals, 9 out of 15 showed submucous lesions of the vagina, 4 had lesions of the cervix and 1 had a large tuberculous abscess in the uterus. In no case were the tubes and ovaries involved. In view of Jameson's investigations, the argument from experimental work against coital infection loses its force. Furthermore, several suggestive cases have been reported in the French literature.

In secondary vulval tuberculosis the infection usually extends from some neighboring organ such as the rectum or bladder. It may be the result of a descending infection from the vagina or from an abscess of the peritoneal cavity rupturing into the cul-de-sac of Douglas. Norris's case was secondary to tuberculosis of the hip joint. It may, however, be hematogenous in origin.

The lesion may be either ulcerative or hyper-

trophic. The latter is the rarer of the two varieties. The ulcerated form is generally preceded and accompanied by more or less enlargement. The margins of the ulcer are sharply defined and frequently undermined. The base may be grey, yellow, red, or brown and may be covered by a dirty crust. It seems to cause the patient no pain. Some patients have complained that urine passing over the raw surface burned. The hypertrophic variety resembles elephantiasis. No age is exempt. The diagnosis depends upon finding the tubercle bacillus either in smears or by animal inoculation, or by histological examination of excised tissue.

Prognosis should be guarded. Spontaneous healing sometimes takes place. More frequently the course is chronic and progressive. Excision may affect a cure but sometimes is followed by rapid and widespread dissemination and death from miliary tuberculosis. Parturition seems to exert a particularly baneful influence. Gaté and Michel report the case of a primary tuberculosis in a young woman 19 years of age. During her pregnancy the ulcer was treated with radiotherapy and applications of zinc chloride in alcohol. The lesion regressed and the patient left the hospital practically cured. Pregnancy progressed normally until a month before term when the membranes ruptured and she gave birth to a normal child. Twenty-four hours after delivery her temperature rose abruptly. She developed a profuse diarrhoea, a distended abdomen and enlargement of liver and spleen. She died on the 16th postpartum day and autopsy disclosed miliary tubercles covering the visceral and parietal peritoneum.

Our case was a secondary one of the ulcerative variety and presented no problem of diagnosis or treatment as the course of the disease was written on her perineum, and she had so advanced pulmonary tuberculosis that any treatment was hopeless. She was a white woman, 44 years of age, who consulted us on February 6, 1940, because she feared she might be pregnant. Her last menses began on December 2, 1939. Her last coitus was on December 18th. Except for "missing" in October, her periods had been regular. She began menstruating at 15 years. The cycle was a 28-day one, and the flow lasted for 3 to 5 days. She had had leucorrhoea for years. Her only pregnancies, two in number, had ended in early abortions shortly after the patient

was married in 1914. Her appetite was good, but she had gas and occasional nausea. Besides pains in her abdomen, she complained of night sweats, shortness of breath and a cough.

There was no history of tuberculosis, cancer, mental disease or diabetes in the family. Except for tuberculosis the patient had never been sick. She had been a patient in Blue Ridge Sanatorium in 1928. On March 1, 1935, she was seen by Dr. Dean B. Cole. At that time she had showers of small and medium moist rales over the upper half of both lungs. She also had herpes along the course of the left 7th and 8th intercostal nerves. Twelve



Fig. 1.—Appearance of vulva. The right labium minor is deflected to the left to expose the ulcer. To the left of anus there is scar of fistulo-in-ano.

years ago she developed a recto-vaginal fistula.

The patient was 5 feet 4 inches tall and weighed 103¼ pounds; pulse 130; blood pressure 136/80; and her blood Wassermann was negative. Dr. Cole reported on her lungs as follows: "Decreased resonance, increased vocal resonance, bronchovesicular breathing and showers of small and medium moist rales upper two-thirds of both lungs, with signs of upper lobe cavitation." Her heart was apparently normal. The abdomen was flat. The abdominal walls were very thin. No masses nor tenderness were made out.

The appearance of the vulva was as shown in the photograph (figure I). The perineum and right side of the vulva were occupied by pus-bathed granulation tissue. A shallow ulcer with rolled edges extended up under the right labium minor which hangs like a curtain attached by its upper and inner edge. I was unable to make a speculum examination on account of tenderness and small size of the vagina, but when I introduced my finger into the vagina, thick pus rolled out as if I had opened an abscess. There was no fistula into the rectum at the time, but the patient said the local lesion started from a fistulo-in-ano on the left side which led to the discovery of her pulmonary disease some twelve years ago. There was a scar of the fistula to the

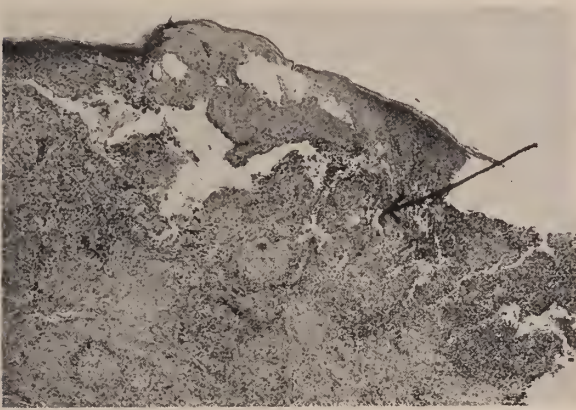


Fig. II.—Photomicrograph tissue removed from edge of the ulcer.

left of the anus. The cervix was posterior and intact. The fundus was anteflexed and firm. There were no masses nor tenderness to either side of the uterus. Smears made from the surface of the ulcer showed no acid-fast bacilli. In passing the swab over the surface of the lesion it encountered a number of fine spicules that were not visible to the naked eye. The patient was put in the hospital for further study. A Friedman test was negative. A biopsy was done and typical tubercles were found in the excised tissue.

The pathological report was as follows: "2-13-40. The biopsy specimen consists of a wedge-shaped piece of tissue about one-half the size of a pea, white in color, and very firm in consistency.

"The microscopic sections reveal marked proliferative changes in the epidermis with down-growth of the rete into the corium. In one area ulceration is apparent (figure II). The subcutaneous tissue shows

many nests of epithelioid cells situated just below the epithelium, and surrounding giant cells of the tuberculous type. These are surrounded by a cellular exudate chiefly composed of lymphocytes with a few plasma cells (figure III). Caseation is not marked.

"It is felt that despite the fact that acid-fast stains could not be done on these sections the

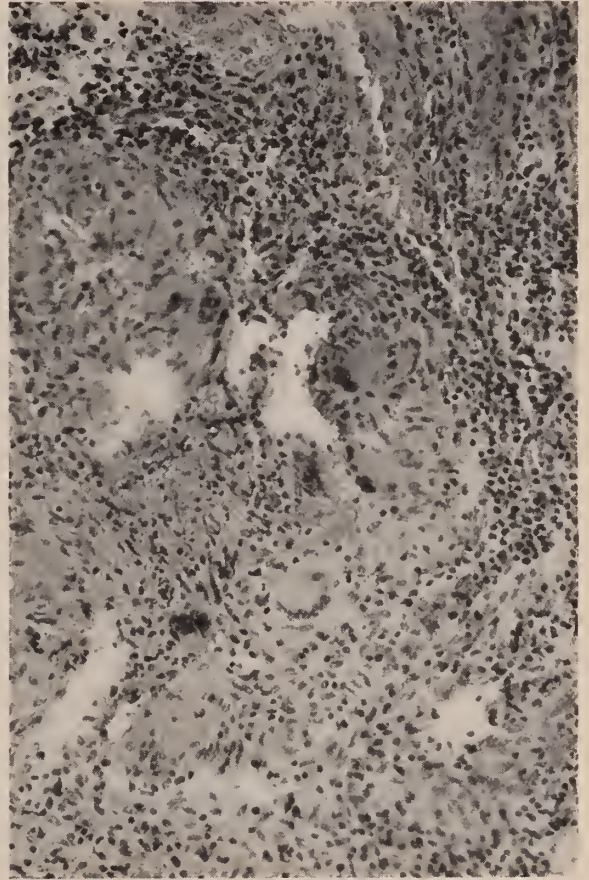


Fig. III.—High power magnification of the area indicated by the arrow in Figure II.

histological findings are characteristic of tuberculosis. The absence of clinical or laboratory evidence of syphilis, and the presence of proved pulmonary tuberculosis further substantiate such a diagnosis."

Her course was steadily downward. On March 5, 1940, her weight was 101¾ pounds. She had a sore throat and was hoarse. She had not menstruated and was sleeping poorly. On April 30th she weighed 96 pounds. She felt ill and could not talk above a whisper. She was again admitted to the Johnston-Willis Hospital for observation. After a

few days she was sent to Pine Camp where she died on May 8, 1940. An autopsy was not obtained.

The authors wish to express their appreciation to Dr. Walter C. Merkel, Pathologist, Union Memorial Hospital, Baltimore, Md., for reviewing the sections.

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Use of Basal Temperature Graphs to Determine Date of Ovulation.

A record of body temperatures, taken rectally daily before rising under standard conditions, is an inexpensive and simple method which very often will indicate the date of ovulation and thus the time when conception is most likely to occur, Pendleton Tompkins, M.D., Philadelphia, declares in *The Journal of the American Medical Association* for March 11. He describes charts and accompanying instructions which can be given women so they can keep an accurate record of daily temperatures.

Dr. Tompkins' method is based on the findings of many investigators that a woman's temperature under normal conditions is lower during the first part of the menstrual month and that the transition from a low level to a higher one occurs about the time of ovulation.

Tuberculosis Hazard In Industry.

Although the tuberculosis hazard in industry, to the young and especially to young women, is recognized by voluntary and official health agencies and by many others concerned, it is not at all appreciated by young women. Actually, girls going into industry tend to believe that they acquire ruggedness by virtue of donning pants and getting their faces dirty. This attitude calls for sound and far-reaching instruction as to diet, rest, the danger of time-and-a-half and double time. It calls, too, for properly managed plant cafeterias and proper plant ventilation, for good public health nursing in the industrial community, for sound medical advice. In fact, it demands all those measures included in a good industrial hygiene program, including careful pre-placement examinations and periodic x-ray surveys.—Ed., *Amer. Jour. Public Health*, July, 1943.

TREATMENT OF PULMONARY TUBERCULOSIS BY ARTIFICIAL PNEUMOTHORAX*

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What is said about the treatment of tuberculosis refers to the treatment of active re-infection, or the adult type, and not to the primary, or childhood type of tuberculosis, which is treated in a different manner.

Bed-rest, adequate food, and fresh air have been, and now are fundamental in the treatment of tuberculosis, but they often prove to be insufficient to bring about inactive tuberculosis. Some fifty-odd years ago sanatorium treatment for tuberculosis was started in this country, and a few years thereafter almost every state had one or more sanatoria for the rest cure for tuberculosis. Often prolonged sanatorium regime would bring about a state of inactivity, or a period when patients were largely free of symptoms, even though the process might be slowly spreading. In many cases, a sense of false security was brought about by bed-rest, for it is not uncommon to find the absence of clinical manifestations misleading. The most satisfactory way of checking the progress of the disease is by frequent fluoroscopic examinations and an occasional 14 by 17 chest x-ray, for a permanent record. With the fluoroscope we actually see the diseased part and can follow the changes.

As years passed, many sanatoria became overcrowded with advanced cases, which had failed to respond to sanatoria regime, and other means of treatment were sought. All physicians who were closely associated with the treatment of tuberculosis realized more drastic and direct methods of treatment were desired and needed. Our allies, the surgeons, were called in conference and, in due time, the surgical collapse of the lungs was developed and slowly expanded as the necessity arose. In the early days of surgical collapse the mortality rate was very high, but following improved surgical technique and a more careful selection of cases by internists, the rate was reduced so much that it is not now any higher than many common abdominal operations. Surgical collapse of the lung for pulmonary tuber-

culosis is now a more or less common practice in all sanatoria and it has become the most valuable ally of the rest regime we have at our command. In many sanatoria, as many as fifty per cent (50%) of the patients under treatment receive some form of collapse therapy. Patients over fifty years of age frequently have other chest diseases and conditions, which do not permit satisfactory collapse of the lung. And, too, the older patients frequently have constitutional diseases, which contraindicate collapse therapy. In this age group of patients artificial pneumothorax is frequently inadequate and the results are unsatisfactory, the most common reason for this being the presence of pleural adhesions of varying degrees. In patients in the age group below fifty, artificial pneumothorax is more often successful and the end results are more satisfactory. With early diagnosis and the early institution of artificial pneumothorax, we can expect to bring about a much larger number of satisfactory end-results in the age groups above and below fifty years of age.

When adequate collapse is brought about by artificial pneumothorax, or any other collapse measure, the sputum is converted from positive to negative (acid fast bacilli absent), which is most important, both for the welfare of the patient as well as the community in which he exists.

Artificial pneumothorax is frequently complicated by the presence of pleural effusions, etc., but they usually do not prove to be of serious consequences.

There are several types of collapse therapy in common use, but artificial pneumothorax is used more frequently than any other form, and many thousand patients are well and profitably occupied today because of it. Wisely used, artificial pneumothorax is our best method of attack on active pulmonary tuberculosis. Unwisely used, it can and has done untold harm.

Artificial pneumothorax is probably indicated at some time in the course of every active case of pulmonary tuberculosis. I am strongly of the opinion that it is indicated in every early case that does not respond promptly to a short period of bed-rest. If artificial pneumothorax fails, and it usually does

*This paper was prepared for delivery before the Roanoke Academy of Medicine, and given in the form of an illustrated talk with chest x-rays before that organization.

not in early tuberculosis, other collapse measures should be tried.

The usual collapse therapies now in use are as follows:

1. Intra-pleural artificial pneumothorax—unilateral or bilateral.
2. Phrenectomy—temporary or permanent.
3. Pneumolysis—internal.
4. Thoracoplasty—unilateral or bilateral.

The less common collapse measures are as follows:

1. Extra-pleural artificial pneumothorax.
2. Oleo-thorax.
3. Artificial pneumoperitoneum.
4. Direct cavity drainage through the chest wall.

In practically all active cases of pulmonary tuberculosis the presence of tubercle bacilli in the sputum

is a most dangerous condition, both for the patient and to the public, as the spread of the disease in the patient and to the public is due to virulent tubercle bacilli. When collapse therapy can be successfully done, the symptoms of active tuberculosis are usually quickly brought under control and the sputum no longer contains tubercle bacilli. These desirable changes are usually brought about in the course of a few weeks, and the patient can return home and begin to follow some gainful occupation, or in the case of housewives they can safely undertake domestic work.

Artificial pneumothorax and other forms of collapse therapy have not replaced bed-rest and sanatorium regime in tuberculosis, but they have added tremendously to the successful treatment of tuberculosis.

Floral Eponym (14)

COLDENIA PROCUMBENS—LINN.

CADWALLADER COLDEN (1688-1776), the son of the Reverend Alexander Colden, was born near Edinburgh, Scotland, February 17, 1688. He graduated in medicine at Edinburgh in 1705 and practiced for a while in Scotland. In 1708 he moved to Pennsylvania. In 1715 he returned to Great Britain for several years. Three years later he again came to this country, this time settling in New York; however, he soon became interested in politics and gave up practice. For years he was Surveyor-General for the State and in 1761 he became Lieutenant-Governor.

While he gave up the practice of medicine, he did not lose interest in scientific matters. Franklin spoke of him as the originator of the American Philosophical Society. His paper on The Virtues of the Great Water Dock attracted Linnaeus' attention. His introduction of the Linnaeus System into America shortly after its publication in Europe is further evidence of his interest in Botany. He also wrote on gravity and electricity. His largest work was his History of the Five Nations of Canada, 1727.

Coldenia procumbens, Linn. is a weed common throughout tropical India. The Hindoos use it as a medicine. Equal parts of the dry plant and fenugreek seed are rubbed to a fine powder and applied warm to boils. This application quickly brings them to suppuration. (Ainslie)*

*Kirtikar, Lieutenant Colonel K. R., Indian Medicinal Plants, Allabad, 1918. Part II, p. 863.

THE NEW MEDICAL PRACTICE ACT

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Attorney for The Medical Society of Virginia,
Richmond, Virginia.

The General Assembly of 1944 will be remembered by the medical profession as having made the first substantial changes in the Medical Practice Act since 1912. The statute of more than thirty years ago contained a provision usually called a "grandfather clause" under which all chiropractors practicing in Virginia at that time were granted licenses without examination, and out of the group so licensed ten are still in active practice. These licensees have the unique distinction of being the only chiropractors who have ever practiced legally in our State.

During the years since 1912 many additional chiropractors and a considerable number of naturopaths have come into Virginia, but none of them has ever applied for or taken a medical examination or been granted a certificate by the Medical Examining Board. According to information obtained by the recent Campbell Commission, there are eighty-six chiropractors in this group and about twenty-five naturopaths, and many of these have doubtless come to Virginia because of the lax enforcement of our statutes. They have always been vociferous in their clamor for special concessions in the matter of licensure.

THE FIGHT BEFORE THE GENERAL ASSEMBLY OF 1944

The insistent demands of this group of unlicensed practitioners for recognition has resulted in a bitter fight before every session of the General Assembly for many years, and it was with the purpose of putting an end to this controversy that the General Assembly of 1942 created a Commission, of which Mr. Stuart B. Campbell of Wytheville became chairman, to study and report on the whole question of medical licensure. The work of that Commission is too well known for recital here, and the bills which it prepared and introduced to carry out its recommendations that the General Assembly grant licenses to the members of this group without examination, and that it create for future applicants a so-called basic science examining board, a majority of whose members could not possibly have any knowledge of the basic science subjects, were

quickly killed in the House Committee on General Laws. The only redeeming feature in the very partisan report of the Commission was the refusal of two of its members to follow its chairman in his abortive efforts to create the basic science board referred to above.

In order to have a positive program to offer the General Assembly in place of the bills sponsored by the Campbell Commission, the Committee on Legislation of the Medical Society of Virginia, with the approval and assistance of members of the Board of Medical Examiners, prepared a complete revision of the Medical Practice Act to be offered and supported in place of the Campbell Commission bills. This revision became House Bill 29, and its patrons in the House of Delegates were Honorable L. Preston Collins of Marion and Dr. E. W. Dodd of Buchanan. The bill was referred to the Committee on General Laws of the House for consideration, and was later reported out unanimously with some very substantial amendments which were accepted by its supporters. In due time it was passed by the House of Delegates and the Senate without further change, and became the Medical Practice Act of 1944.

The 1944 Medical Practice Act is a complete revision of the existing law, but much of the old statute is retained in the new. In its preparation an attempt was made to give logical sequence to its provisions, and to obtain a structural unity which was sadly lacking in its predecessor. However, some of the amendments made during its passage through the General Assembly were prepared by inexpert draftsmen and the finished product is not all that could be desired. The points of difference between the former statutes and the new Act will be taken up in order.

THE BOARD OF MEDICAL EXAMINERS

Since 1884 the regulation of medical practice has centered around a Board of Examiners with authority to determine competency and grant licenses to practice, and to represent the State in its powers of supervision and regulation. For many years this Board has consisted of nine medical doctors, one

homeopath, and one osteopath, the members being appointed by the Governor for four year terms from a list of nominees submitted by the State societies of the respective schools of practice represented on the Board. The material changes made in the new Act with respect to this Board are as follows:

The Board is increased to fourteen by the addition of two chiropractors and one naturopath, the second chiropractor having been added by the House Committee on General Laws. The members are to be appointed by the Governor as heretofore, but he is not required to appoint from the nominees of the professional societies. No member except the secretary is eligible to serve for more than two successive terms, and all existing terms are ended as of June 30, 1944. On that date appointments will be made for terms of from one to five years and thereafter successors will be named for uniform terms of five years each. These provisions have been made applicable to all of the State examining boards, many of which have been reduced in number of members.

DIFFERENT SCHOOLS OF PRACTICE DEFINED

The new Act defines the various schools of practice recognized in Virginia, and prohibits practice beyond the scope of the definitions. However, the General Assembly changed the definition of the practice of chiropractic contained in House Bill 29 in such a way as to make its meaning at least doubtful, but at the same time provided that such practice shall not include "the use of surgery, obstetrics, osteopathy, nor the administration nor prescribing of any drugs, medicines, serums or vaccines". Nothing is said as to the use of the x-ray, x-ray therapy, and electro-therapeutics, but it seems clear that these are not within the scope of the practice as defined. In defining naturopathy the use of these agencies is expressly excepted. The practice of osteopathy includes all remedial agencies except surgery and drugs, but if the practitioner has qualified before the Board on these subjects his field of practice is unlimited. In the future the osteopaths will take the same examinations as the medical applicants except that practice of osteopathy will be substituted for practice of medicine.

EXAMINATION OF CANDIDATES

The Act provides that the examination of candidates for certificates to practice any branch or school of the healing arts except chiropody shall be in two

parts or sections known as Part I and Part II. Part I will be given by the full Board and must be taken and passed by applicants of all schools of practice to become eligible to take Part II. This is in substance a basic science examination, and is intended to eliminate incompetent and untrained applicants before they reach the final examination which is adapted to their own school or branch of medicine. The subjects included in Part I are anatomy, histology, pathology, physiology, bacteriology or microbiology, biochemistry, diagnosis, sanitation and hygiene. An average grade of 75 per cent is required, with no grade lower than 60 per cent on any one subject.

For candidates for certificates to practice medicine, homeopathy and osteopathy, Part II of the examination includes pediatrics, neurology and psychiatry, surgery including gynecology, obstetrics including embryology, materia medica and therapeutics, medical jurisprudence, public health and hygiene, and practice of the branch of medicine of the applicant. For chiropractic and naturopathic candidates Part II embraces the philosophy, practice and therapeutics of their own school or branch of practice, and the examination is given by their representatives on the Board. This means that candidates in these two branches are no longer required to be examined on certain subjects which are unrelated to the limited remedial agencies at their disposal, and that for the first time they have on the Board persons competent to examine them in their own methods and procedures. While Part II of the examination of these applicants may be easy to pass, on the other hand it is thought that any such applicant who has sufficient knowledge of the subjects embraced in Part I of the examination to make a passing grade thereon will not be a menace to the health and welfare of our citizens.

PRE-MEDICAL AND MEDICAL EDUCATION REQUIRED

The provisions for pre-medical and medical education with respect to all applicants except those in the chiropractic and naturopathic schools remain unchanged, and will not be repeated here. In order to qualify for taking Part I of the examination candidates for certificates to practice chiropractic and naturopathy must have completed successfully at least a two year academic course in an accredited college (except that prior to December 1, 1946,

graduation from a high school is all that is required) and must have studied their branch of the healing arts for not less than two years in a recognized professional school. The college of the applicant must be registered with the State Board of Education as maintaining a standard satisfactory to that Board, but such standard may be based upon the grading of the national association of the particular branch of practice.

Chiropractic and naturopathic candidates for Part II of the examination must have successfully passed Part I, and in addition thereto each such candidate must be of good moral character, and must produce evidence verified by affidavit and satisfactory to the Board that he (a) has studied his branch of the healing arts for not less than four school years, including four satisfactory courses of at least eight months each in four different calendar years, or for not less than thirty-two months with four equivalent satisfactory courses of at least eight months each, in a school or schools registered with the State Board of Education as maintaining a standard satisfactory to such Board but based upon the grading of the respective national associations, and is a graduate of and has received a degree or certificate of graduation from such school.

PROVISIONS WITH RESPECT TO CHIROPRACTORS AND NATUROPATHS ALREADY PRACTICING IN VIRGINIA

Under the provisions of the Act as originally drawn the only way chiropractors and naturopaths could obtain licenses in Virginia was to take and pass the examinations prescribed therein. However, there was a strong demand on the part of a number of members of the Assembly that the unlicensed practitioners in these groups be granted licenses without examination, and in order to satisfy these members and avoid a full grandfather clause it seemed best to make some further concessions. The whole question was given a lot of study by a sub-committee of the General Laws Committee of the House, and the plan finally adopted was worked out in detail by this sub-committee, was accepted by the full committee, and written into the statute by the General Assembly. While the plan was clearly a compromise, it seemed to be the best compromise that could be obtained from our legislative body, and was approved by the Committee on Legislation of the Medical Society of Virginia. It was fought bitterly by the chiropractors and naturopaths in the

House of Delegates, and only accepted after Mr. Stuart Campbell had failed in a desperate fight to substitute a grandfather clause for the Committee's amendment.

Under the Act as finally passed any chiropractor or naturopath who has been practicing in this State for a period of one year prior to July 1, 1944, may, within the six months' period following June 20, 1944, apply to the Board for and obtain a license to continue his practice for a period of five years or until December 31, 1949. During this five year period the provisional licensee may take Part I and Part II of the regular examination and be awarded a permanent license. If the provisional licensee fails to qualify for the full license prior to December 31, 1949, his temporary license will be revoked unless he shall have obtained a license under an alternative plan set out in sub-section (d) of section 1613-a of the Act.

Sub-section (d) creates a Special Board of Examiners in Basic Science to consist of three members appointed by the Governor prior to July 1, 1944, from the faculties of the accredited colleges and universities in the State, none of whom shall be a practitioner of any branch of the healing arts. This board is required to conduct an examination in November of each year for five successive years on the following basic science subjects: anatomy, bacteriology, elementary chemistry, pathology and physiology.

Any person who can satisfy the special board that he is of good moral character and a graduate of a recognized school of chiropractic or naturopathy, and that he was (1) a practicing chiropractor or naturopath in the State of Virginia on January 1, 1944, and for the twelve month period immediately preceding, or (2) was in the military or naval service of the United States on the effective date of the Act and was a practicing chiropractor or naturopath in the State at the time of entering such service, may take the examination given by the Special Board of Examiners instead of Part I of the regular examination given by the Medical Board. However, he must establish prior to November 1, 1944, his eligibility to take such Special Board examination. Additional time to establish eligibility is given persons in military service. If the applicant makes a passing grade of 50 per cent on the special examination he shall be permitted to take Part II of the regular examination, and upon passing that exami-

nation shall be granted a full certificate to practice. Any applicant failing to pass a Special Board examination may take subsequent examinations upon paying the prescribed fee. No applicant who has established his eligibility before the Special Board shall be prosecuted for or enjoined from practicing without a license prior to July 1, 1949, but shall in all other respects be subject to the provisions of the Act.

INJUNCTIONS GRANTED AFTER CRIMINAL CONVICTIONS

The Act vests in equity courts the power and jurisdiction to enjoin unlawful practice of any branch of the healing arts in a proceeding brought by the Board of Medical Examiners or any member thereof, or by any citizen of this State, but an amendment to the bill limited this procedure to cases where a conviction has been obtained in a criminal prosecution. It is hoped that a future General Assembly will grant the right to use injunctive procedure in all cases of unlawful practice.

OTHER PROVISIONS OF THE ACT

The provisions of the older statute with respect to the practice of chiropody, reciprocity with other States, registration of certificates and licenses, grounds for refusal on the part of the Board to admit candidates to examinations or reciprocity or to grant certificates, suspension or revocation of certificates, hearings before the Board on complaints, appeals from decisions and actions of the Board, prosecutions by the Board for unlawful practice, and exceptions and exemptions from the provisions of the Act, are incorporated into the new Act with very few changes except those deemed necessary for clarity. These changes can be readily determined by a comparison of the two statutes.

A new section provides that any chiropractor or naturopath when using the title "Doctor" or "Dr." in connection with his name shall also use the word Chiropractor or D. C., or Naturopath or D. N., as

the case may be, and that the title "Doctor" or "Dr." shall not be used alone.

The old section prescribing what shall constitute practice of medicine has been rewritten so as to include all branches of the healing arts, and many ambiguities and uncertainties which had inadvertently got into the language of the section have been removed. The penalty section too has been revised in order to remove some language of doubtful meaning.

While the new Act promises to solve at least some of the problems surrounding medical licensure in Virginia, it should be remembered that no statute ever completely meets the purposes for which it was enacted, and that experience in actual operation is the only test that has any value. If the Special Board examinations result in admitting to licensed practice the most competent of the large group of chiropractors and naturopaths already here, and eliminating the others, then a long step will have been taken in the right direction. With that problem solved it seems reasonably certain that the Act contains all the law needed for the effective regulation of the practice of medicine in our State.

It is unfortunate that in the fight over House Bill 29 the excellent plan worked out by Dr. Wyndham B. Blanton and his Special Committee, for the purpose of establishing in Virginia a medical examiner system for ascertaining the causes of suspicious and unnatural deaths, had to be sidetracked for the current session. However, it was thought advisable that the undivided efforts of the Society be directed toward the enactment in 1944 of a satisfactory Medical Practice Act. If the plan proposed by Dr. Blanton's Committee can have the same loyal support of the profession in 1946 as was given House Bill 29 in the session just ended, it is believed that an efficient Medical Examiner System can be established.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

This is a case of a white forty-three (43) year old gravida XII para XI who had no prenatal care during this or previous pregnancies. A physician was seen January 31, because of headache, visual disturbance, abdominal pain and difficult breathing. The patient stated that headache and vision had grown progressively worse during the past six (6) weeks. She had a cough and, occasionally, blood tinged sputum for eighteen (18) months after having pneumonia. Amenorrhea since early fall preceded by irregular menstrual periods led the patient to believe she was having "change of life". The youngest child was six (6) years old.

Physical examination revealed coarse rales in the bases of both lungs, heart enlarged, no murmurs, blood pressure 185/90, 3 plus albumin and casts in the urine. The uterus was about the size of a seven months pregnancy. Hospitalization was urged by the physician but disregarded by the patient. Four (4) days later the physician was notified that the patient was in the hospital. She was restless, semi-comatose and the blood pressure was 220/100. The urine showed an increase in the amount of albumin and number of casts. She was given magnesium sulphate, glucose and morphine. A macerated infant was delivered spontaneously on the day after admission. Following delivery of the placenta a second very small foetus was expelled. A few hours later bleeding was sufficient to require packing the uterus. The blood pressure did not drop to

less than 200 systolic. Soon thereafter the right arm and hand became motionless and a hemiplegia was assumed. The pulse became rapid and irregular and the respiration increased in rate. On the second postpartum day the temperature went to 105. Death occurred thirty-six (36) hours after delivery. An autopsy showed a cerebral hemorrhage involving the posterior fornix of the left ventricle, cloudy swelling of the liver and congestion of the spleen.

The report of the Committee on Maternal Health showed this to be a preventable obstetrical death due to ignorance and neglect on the part of the patient. She would list herself among the grand multipara who can continue to "have babies because they have always done so without the care of a physician". Repeated pregnancies without medical supervision may have been responsible for conditions that proved fatal in this case. After the only visit to a physician the advice was disregarded until the patient was in extremis. No physician could have prevented this outcome with the start that was given. The course might have been different had medical advice been sought sooner. Probably during this pregnancy, possibly during a previous pregnancy, termination and sterilization might have been wise procedures.

This case is cited to show that obstetric care cannot be provided unless the patient assumes her share of the responsibility.

Army Trains Men With Poor Vision for Limited Military Service.

About a thousand men a week, a majority of whom were rejected for active military service because of defective vision, now are entering the Army's Limited Service School for special training, according to the Better Vision Institute. Men with visual shortcomings entering the school, which gives a month's intensive training, outnumber two to one

the men with all other defects combined. These men with poor eyesight have only about one-tenth to one-twentieth of normal vision. Although one out of seven of the men with non-visual shortcomings is rehabilitated for general military service, very few of the men with eye defects are reclassified for general service. By utilization of the men from the school, thousands of other soldiers have been released for combat service.

PUBLIC HEALTH

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for February, 1944, as compared with the same month in 1943, and for the period of January through February, 1944, compared with the same period in 1943, follows:

	Feb. 1944	Feb. 1943	Jan.- Feb. 1944	Jan.- Feb. 1943
Typhoid and Paratyphoid Fever	5	13	10	28
Diarrhea and Dysentery	216	84	335	179
Measles	3,016	1,192	4,006	1,609
Scarlet Fever	303	151	509	409
Diphtheria	27	37	50	93
Poliomyelitis	0	4	1	8
Meningitis	94	147	162	240
Undulant Fever	2	3	6	6
Rocky Mountain Spotted Fever	1	1	1	1
Tularemia	1	3	8	19

OCCUPATIONAL DISEASES AND THE PHYSICIAN

The recently enacted amendment to the Workmen's Compensation Act of Virginia to include certain scheduled occupational diseases within the scope of the law imposes new and important tasks for the physician of the Commonwealth.

That the problem of occupational diseases in Virginia is of major importance is seen from the figures reported by the State Health Department in 1938 in its study of the industrial hygiene problems in Virginia. On the basis of nearly 40 per cent of all employees in the types of industries considered, it was shown that 13,600 workers were potentially exposed to lead and its compounds, 54,900 workers

were exposed to potential dermatitis producers, 20,000 to organic solvents, 16,000 to silica dust, and 41,000 to silicate dusts. Twenty-three thousand six hundred workers were exposed to a potential carbon monoxide hazard, 12,000 to sulphur dioxide, and 15,000 to various other gases. Since these figures were compiled prior to wartime expansion of industry, the number of workers and the severity and types of their exposures to hazardous materials have undoubtedly greatly increased.

While lawyers and administrators decide whether an occupational disease is compensable under the law, only the physician can decide if the disease is occupational. The responsibility of the physician is great indeed when all the issues involved are considered. Much unnecessary litigation and expense can be avoided if a proper diagnosis is made at the proper time. To one unfamiliar with industrial diseases this diagnosis may be rather difficult to make. Since the practice of most physicians includes patients from all walks of life, it is to be expected that at some time they will be confronted with the problem of occupational diseases; therefore, many of these are familiarizing themselves with the pathology, clinical symptomatology, and diagnosis of these diseases—a worthwhile effort.

As previously indicated, the State Health Department's Bureau of Industrial Hygiene will render any assistance to the medical profession in the evaluation of industrial exposure, either from a medical or engineering standpoint.

Conference on Industrial Medicine, on Hygiene and Nursing.

The Second "War Conference" of industrial physicians, industrial hygienists and industrial nurses will be held in St. Louis, May 8-14, at the Hotel Jefferson.

This "War Conference" will present an unequalled opportunity for every one interested in any degree in industrial health problems—especially those of

present wartime exigencies—to hear them discussed by the recognized experts in all departments of this important and growing field.

The Hotel Jefferson offers accommodations, but reservations are coming in very fast, and, to be sure of your own, write to John Reinhardt, Chairman, "War Conference" Housing Bureau, Syndicate Trust Bldg., St. Louis, Missouri, without delay.

MEDICAL SOCIETY OF VIRGINIA

Committee on Public Relations and Medical Service.

The Committee of the Medical Society of Virginia on Public Relations and Medical Service met in Richmond, Virginia, on Wednesday, March 1st. There was a full Committee membership present: Drs. I. C. Riffin, H. B. Mulholland and J. M. Emmett.

The purpose of this meeting was to confer with representatives of the Farm Security Administration who were interested in a hospital care plan for Virginia for individuals who were borrowers from the Farm Security Administration. Mr. James S. Wills, State Director of the FSA in Virginia, represented the FSA and Mr. C. Rex James, Senior Health Service Specialist of the FSA, who has charge of these hospital plans in this district, presented the matter to our Committee.

After listening to the description of the plan

which has been in operation in North Carolina for several years and a similar plan which is in operation in West Virginia, the Committee on Public Relations and Medical Service was of the opinion that the plan that was in operation in the two states referred to and a similar plan which is being proposed for Virginia were satisfactory and we could find no reason to criticize the effort to establish it in our state.

The suggested surgical schedule for fees was presented to our Committee and we felt that the fees suggested were reasonable, considering the low income bracket group of borrowers who were being covered by this plan.

I. C. RIFFIN, M.D.

H. B. MULHOLLAND, M.D.

J. M. EMMETT, M.D.,

Chairman.

CORRESPONDENCE

Appendicitis.

Linden, Va.,
February 23, 1944.

TO THE EDITOR:

Appendicitis has always existed, but not under its present name. I graduated at Columbia Medical College, class of '83, Washington, D. C. This medical school is now the Medical Department of the George Washington University.

I never heard the name appendicitis used until about 1895. I was then on the surgical staff of the hospital and usually gave the anesthetic for the surgeon. The surgeons were complaining very much long before referring them to a surgeon, as most of the cases died from the operation. The surgeons preferred to operate on a case as soon as recognized. I gave the anesthetic for a busy surgeon many times and saved the appendices and two half gallon jars full. Comparatively few showed any sign of dis-

ease, a few had enteroliths. As a rule he made a small incision, hooked up the appendix, cut it off, put a drop of carbolic acid on the stump, put one stitch of catgut through the stump, then let it go. The skin wound had one stitch and an antiseptic dressing. As a rule all recovered without incident in a few days and then referred to the family physician. A country girl patient of mine, 17 years old, was operated on for appendicitis and put to bed in a hospital. She disappeared during the night, was not missed, and arrived at her home the next morning, having walked 40 miles. She made a good recovery.

About 25 years ago I came to the conclusion that appendicitis should yield to a proper serum treatment. I tried it on several mild cases and the pain was better the next morning. Many cases which I have treated one time did not come back for any further treatment and do not think they had that disease. One hundred and sixty cases were treated

by me, that I carefully watched, but I found that sixty of them had been picked up by a number of nurses and taken to a hospital and operated on. Later they were sent back to me to treat their healing wounds. The patients that I treated, as a rule, would not acknowledge that they had been cured of appendicitis, so I had to find a way to have a prospective case diagnosed by a competent surgeon.

CASE 1. Mrs. D. came in about 20 years ago. She stated that her monthly periods had stopped and, as she was about fifty years old, she could not tell whether it was a change of life or she was pregnant, also she complained of a pain in her side at McBurney's point, which indicated appendicitis. I sent her to a well known surgeon for operation; he sent her back with a note saying she was pregnant and it would not be proper to operate until she was delivered. She was given a few drops of serum hypodermically; the pain in her appendix went away and she was delivered of a female child who lives in this neighborhood and is married.

CASE 2. A young woman came to me walking with a crutch and a cane and dragging one foot. She said she was an apple facer and worked with her head and body in a barrel all day, the rim of the barrel coming against her side. She laid on my operating chair and on palpating her I diagnosed appendicitis; also found she was 3 months pregnant. I asked her if she expected to be married soon. She was quite indignant and said she expected to be married sometime "but not now". She went away and did not pay for my service and made fun of me saying she had appendicitis when she bruised herself on a barrel. She was married soon and when the baby was about a year old she came to my office and said the pain had come back in her side, so I gave her a note to a hospital where she went and was operated.

CASE 3. A man came to me with his 14 year old daughter. He said he was employed by the State of Virginia to do road work and drive a tractor and as he moved about his family went with him. He said his daughter had been suffering with a pain in her right side for three or four years. He had

consulted a number of physicians and all had said she had appendicitis and should go to a hospital and be operated. I told him to bring her to me immediately after she was through with the next attack. When he came I gave the girl an injection once a week for four weeks. He came to see me sometime after that and said his daughter had not had any more attacks and if she did he would lose no time in coming to see me. I have not heard from him.

CASE 4. A young man was working as a farm hand on the estate of a well known and high class physician. While pitching hay, he was suddenly attacked by a pain at McBurney's point and was entirely disabled. The foreman on the farm telephoned to the physician owner and he shortly after came with a surgeon. They both diagnosed appendicitis and recommended going to a hospital and immediate operation. The patient could not read nor write but had "a mind of his own" and refused to go to a hospital and asked to have his mother sent for. His mother came soon with a car and took him home, which was near my office. I heard the youth was home but as they did not send for me I did not go to see him at that time. Three weeks later his mother came to see me and said her boy was about dead and she would like me to come down so I could "sign his death certificate". I went to see him at once and carried my hypodermic needle and serum. The patient was unconscious—in a muttering delirium. His right thigh was rigidly flexed on his abdomen and his knee under his chin. His leg and foot were straight up in the air and rigid. I gave him a few drops of serum and told his mother to let me hear from him every day. I went to see him a week later and found him sitting up. He wanted to come to my place and chop some wood. I told him he was not well enough yet. He came to my office for the last two injections and later on chopped some wood.

Every case of appendicitis I have had was better the next day and no case has had to take to his or her bed if they walked to my office for the first treatment.

REGINALD MUNSON, M.D.

WOMAN'S AUXILIARY to the MEDICAL SOCIETY OF VIRGINIA

President—MRS. W. CLYDE WEST, Alexandria.
President-Elect—MRS. PAUL C. PEARSON, Turpin.
Recording Secretary—MRS. C. C. SMITH, Norfolk.
Corresponding Secretary—MRS. N. G. SCHUMAN, Alexandria.
Treasurer—MRS. REUBEN F. SIMMS, Richmond.
Chairman, Press and Publicity—MRS. E. LATANE FLANAGAN, Richmond.

Doctors' Wives in War Time.

When your Press and Publicity Chairman asked me to write an article on "Diversions of a Doctor's Wife in War Time", I frankly said "I cannot do it." She said, "You must have some message for the wives who have had to stay at home and learn to like it." So it is to you who for some reason have had to give up your outside work, that I write this message.

The war has brought many changes and sacrifices in our lives. There are so many demands we are confused. Vacation, social pleasures, most outside amusements may even be gone for some of us for the duration, but if we enter into these cheerfully and willingly there will be many compensations.

When I was very young I had occasion to read in chapel a powerful sermon by the Rev. Ernest Simpson on "Blessed be Drudgery". It made a deep and lasting impression for the point was to prove there is a dignity in labor with the hands. Many times this sermon has helped me over difficult times.

Then there is the old Chinese maxim, "A hundred men may make an encampment but it takes one woman to make a home". I feel strongly that a well run attractive home is every busy man's right, especially our doctors' who are doing double duty these days.

So, if your maid gaily departs to work for Uncle Sam at double her old salary, don't sit down and feel sorry for yourself. Just map out the most efficient way and go to work.

From morning until night we are asked to give in a big way and often comes the disheartening realization that we have not done a very good job because fatigue has made us cross and irritable. If only we could learn to laugh at minor mishaps and not be a slave to the dust cloth.

Plan your work so you can have a quiet hour away from everyone (especially the incessant bells), relax and read, or just do nothing.

If possible keep up a church society, your Garden Club, a few hours at the Red Cross, especially your Medical Auxiliary.

And above all, have a hobby—what safety valves are pianos for the music lovers; gardens for those who enjoy digging and creating; hiking, tennis; books for those who enjoy reading. A feeding station for birds in front of your window will open up a new world to you for birds vary in their habits as much as human beings.

There are many diversions if we seek them and many hard tasks for every one these days. But even we who are kept so closely at home can be informed on legislative matters concerning the medical profession and be prepared to discuss them intelligently with the layman. We can find many ways to be of assistance to our husbands if only in helping keep up their morale. And be always ready to help in any way possible the men and women in service who are giving everything to make our country safe for us.

POLLY GRAHAM LATANÈ
 (MRS. HARRY A. LATANÈ)
Past President.

"They also serve who only stand and wait." But like the American women of today the doctors' wives of Virginia want to serve by doing rather than by waiting. Consequently, we see the members of the Auxiliaries in Virginia, both collectively and individually, participating in Public Relations Activities of all kinds.

Helping to win the war is, of course, first in importance. Our assistance in the all-out war effort takes many forms. We have representation in all branches and services of the American Red Cross: the Hospital and Recreation Corps; Nurses Aides; Canteen, Home Nursing; Surgical dressings, Knitting, and Sewing; Blood Donors; Motor Corps; etc. The doctors' wives are very active in USO work; they not only buy bonds but help in the successive bond drives; and you will find them in their place in the various Civilian Defense Organizations.

The war will end and we hope soon. So we feel that it is most important for us to take a vital interest in all civic affairs and post-war planning. The communities must be kept the same or improved upon so that our boys and husbands who are giving their all will not feel that their sacrifices have been in vain. We have a charge to keep! With this as our stimulus we, without regard to race, creed, or color, are wholeheartedly supporting programs that will make our towns better and healthier places in which to live. We are cooperative with the social agencies, hospital auxiliaries, cancer and tuberculosis organizations, Parent-Teacher Associations, and our churches.

There is much to be done and it is the desire of our State and local Auxiliaries to continue to play a part in this thing called "living" with the hope that it will become a better "living".

ROSSELL HIGHTOWER
(MRS. R. B. HIGHTOWER)
Public Relations Chairman.

Norfolk Auxiliary.

The January meeting was held on the 17th in the Library of the Medical Arts Building. This was in the form of a public relations meeting and members of various women's organizations in Norfolk were special guests.

Dr. W. E. Butler gave a very interesting talk on the "Social Aspects of Medicine". A rationing of medical service probably would result if the Murray-Wagner-Dingell Bill passes Congress, Dr. Butler told members of the Auxiliary.

Preceding the program the Auxiliary voted to furnish another room in an army camp for recreational purposes. The group completed one room at Camp Pendleton and a letter was read thanking the Auxiliary for its work.

The Auxiliary also voted to present the Medical Society with a gift at the next meeting, which will be designated as Doctor's Day.

CLARA P. BROCK
(MRS. M. F.)

Chairman, Press and Publicity.

The Petersburg Medical Auxiliary

Met on January 25th at the home of the retiring president, Mrs. Henry M. Snead. Plans for the hospital linen shower, held on February 28th, were completed and contributions were made for this and the "March of Dimes" drive for infantile paralysis. The linen shower is sponsored through the churches and any civic or cultural organization interested as well as individuals. This effort is open to the community, and any individual or group interested may have a part in helping to replenish linens at the hospital.

Officers recently elected are: president, Mrs. J. E. Hamner; vice-president, Mrs. E. J. Nixon; recording secretary, Mrs. W. F. Drewry; corresponding secretary, Mrs. V. E. Lascara; and treasurer, Mrs. Meade Edmunds.

At the shower held on February 29th, linens valued at \$675.00 were contributed, with more promised.

The Auxiliary to the Alexandria Medical Society

Met on February 7th at the home of Mrs. Nathan Schuman. Reports of the state board meeting were given by Mrs. Clyde West and Mrs. H. A. Latane. Mrs. Robert Hightower, president, conducted the business meeting during which various spring projects were discussed. Mrs. Elsa Butler Grove, executive secretary to the Alexandria Council of Social Agencies, was the guest speaker.

VIRGINIA MEDICAL MONTHLY

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Cheap Medicine

THE recent hearing before the General Laws Committee of the Legislature reminds us that many people want cheap medicine. The quality seems to be unimportant. The chiropractors testified that a diagnosis was not necessary. They did not need to know what was the matter with the patient in order to practice their art. The naturopaths testified that they were just like the chiropractors except that they made use of Nature's herbs as well. Unfortunately, for clear thinking on this question, what these cultists said is true in the great majority of cases. In the last century Jacob Bigelow of Boston spoke and wrote on the self-limiting character of disease and Oliver Wendell Holmes enlarged upon this theme in his own engaging style. Were it not for the exceptional patient with an infectious disease or one with a malady such as cancer or meningitis that is curable when the diagnosis is made early, and is incurable when the proper treatment is delayed, there would be no reason for protecting the public from such practitioners. For every six or eight persons who need specific treatment or who should be reported to the health authorities, there are 92 to 94 who will do as well with manipulations or herbs or with whatever line of treatment that suits their fancy. The problem, of course, is to pick the six or eight out of the hundred.

There is more to this question than the age-long yearning to buy medical goldbricks. By its accomplishments in the past few decades, the medical profession has "sold" itself to the public. Never before have so many people wanted, yea demanded, medical protection. At the same time medical knowledge has expanded, diagnostic technics and methods of treatment have become complicated and expensive, until now a medical education represents a small fortune in money and six to ten of the best years of a person's life. When this is taken into consideration, the usual charges of physicians and surgeons seem little enough. On the other hand, more and more people are find-

ing these moderate charges burdensome. The occasional large fee which invariably receives wide publicity makes matters worse, just as the thoughtless and inconsiderate display of great wealth breeds revolutions.

Serious study has been given to this perplexing problem. In 1932 the Committee for the Study of the Cost of Medical Care, after expending several million dollars and several years in study, published a lengthy report. This report stated the problem clearly but offered no practical solution. Doctors have been giving their services willingly whenever it is necessary, but there is a large number of honest, self-respecting people who are not willing to accept charity. They want medical care, but they want to pay the doctor, who is equally honest and self-respecting, on their own terms and set their own price. This group of people who want some kind of medical care but who are not willing to, or who cannot pay what good medical care costs, is constantly growing. The chiropractors say that this group needs them. The doctors are unwilling to lower their standards and cheapen medical education. They have been so engrossed with the scientific aspect of medicine that they have paid too little attention to the business side of it. What they need is a business manager who will not only devise easy ways of payment but also let the public know just what they are getting for their money. The politicians say, "Let us handle the situation." The government seems only too willing. The politicians like to have the impression spread that they are going to give the people free medical and hospital care. They say little about the payroll deduction. What the people ought to know, before it is too late, is that with half of the proposed payroll deduction they could pay the doctor and hospital of their choice. It is all a matter of budgeting. If Uncle Sam does the budgeting, the people will pay through the nose.

Our Advertisers

NEVER have our advertisers been so important as right now. They are important to you because conditions have changed and are changing so rapidly that you hardly know what you can get or where you can get it. They are important to us because we need their financial help. About four hundred of our members are with the Armed Forces and consequently are exempt from dues. Some of our advertisers complain that our readers do not read the advertisements. When reply coupons are printed with their advertisements, they get no replies. The editor has received complaints from readers that the MONTHLY is so good that they feel compelled to read it from cover to cover. Let the advertisers know that you do this.

Occupational Therapy Issue

FOR some time there has been the feeling that the medical profession has neglected, in some measure at least, certain useful methods of treatment. This is particularly true of physiotherapy and occupational therapy, as these medical tools may only be used when definitely prescribed by the physician. As we face the tremendous task of rehabilitation in the post-war period, we should know more about these methods. The MONTHLY is fortunate in having five authoritative articles on occupational therapy and, for the sake of emphasis, it is publishing them together in the present issue.

It might be well in this connection to call attention to the Virginia Occupational Therapy Association which was organized in 1942 as an affiliate of the American Occupational Therapy Association. The Association was formed to advance the standards of education and training in this field, to promote research, and to engage in any other activities that in the future may be considered advantageous to the profes-

sion and its members.

Members are divided into four classes: Active, those who are or who have been actively engaged in the use, direction, or promotion of Occupational Therapy and are registered Occupational Therapists or physicians; Associate, those who are interested in Occupational Therapy or its value, in relation to other reconstructive activities; Sustaining, those who are eligible as associate or active members but whose interests in the objects of the Association prompt them to larger contributions to its support. Honorary membership may be conferred upon those who have performed distinguished service in the field of Occupational Therapy.

The American Association maintains a registry of qualified therapists. At the present time the registry is open only to graduates of accredited schools after the completion of one year of successful work.

Conserve Waste Paper

AMERICA'S hospitals have a bigger than average stake in the current waste paper salvage program. If civilian hospitals are to continue to receive their full quota of paper-packaged supplies, and at the same time lend a hand to the military hospital units abroad, it is essential they dig out now every ounce of available waste paper and dispose of it.

Paper has gone to war by the hundreds of thousands of tons, with no small part of it represented in the form of containers for foods, blood plasma, medicine and supplies for hospitals. Demand for paper is reaching unheard of tonnages after two years of war. American inventive genius has produced bomb bands of paper, shell cases of paper, and ammunition chests, practice bombs, and camouflage material, all manufactured from paper.

It takes 25 tons of blue print paper to build one big battleship. More than 700,000 different kinds of items are shipped to the Army, paper-wrapped or boxed. Each 500 pound bomb requires 12 pounds of paper in the form of rings (bands), tops and bottoms. Each 75 mm. shell takes 1.8 pounds of paperboard for its protective container.

It takes 52 pounds of paper to protect an Army hospital ambulance for overseas shipment.

These vital needs for paper must be satisfied, which means that the nation's civilian hospitals must do more than their part.

With such heavy demand on paper of all kinds, shortages have appeared, grown progressively worse and are now at a critical stage with war production and civilian supplies threatened by paper mill closings.

The chief substitute for the scarce wood pulp today is waste paper. Not only can waste paper stretch diminishing supplies of wood pulp—it can be used directly in the manufacture of many important war products, thereby saving proportionate amounts of wood pulp for other uses.

The paper shortage is very real. Unless adequate supplies of waste paper can be moved to the mills, the curtailed paper and paperboard production will seriously retard the war program and will have even more serious effects upon civilian uses of paper. Hospitals, doctors' offices and other medical and dental centers that depend on packaging to safeguard supplies, have a direct stake in salvaging waste paper as insurance that there will be adequate raw materials for continued production of paperboard. They have an even greater obligation to see that military and naval hospitals are given full supplies of paper through assistance in the waste paper salvage program.

The active help of every hospital in the program should consist of:

- (1) Avoiding waste in the use of paper.
- (2) Salvaging waste paper and returning it to use.

Today, the War Production Board regional offices throughout the country are asking for the cooperation of every hospital, every doctor, every medical and dental unit in the scrap paper program. They are asked to dispose of books, magazines, newspapers, records, wrappings, cartons, advertising literature and bulletins. They are asked to ferret out every last scrap or shred of paper to go into the salvage paper drive.

In the Chicago area, literally tons of old hospital records are being thrown into the scrap pile. Old medical records of a confidential nature are being gathered together, bound up, and delivered to the shredding machine.

At St. Luke's in Chicago, Leo Lyons, director, is today supervising the huge task of micro-filming all the hospital's records for the last 40 years and tossing the original records into the scrap heap. Micro-films will form a more permanent and safer record, and at the same time sufficient floor space is being conserved to take care of developing new employee locker rooms and additional bed space.

Waste paper from St. Luke's is averaging 6,000 pounds of salvage each month. In addition, the accumulated records of 40 years, which are being micro-filmed, will total many tons of paper, one-half of which is in medical records, and the balance in hospital's financial records. The records were stored in six rooms. Thus, six full-size hospital rooms will be made available.

Cook County Hospital and Evanston Hospital, the latter in a Chicago suburb, are also micro-filming their records, and both Wesley Hospital and Children's Memorial Hospital are preparing to do the same within the next few weeks. Others have also indicated their willingness to take the same step.

While micro-film machines are not available for purchase at this time, they can be rented from local sources, the names of which are available from your local War Production Board office.

But micro-filming of old records is only one step that can be taken to swell the nation's paper scrap piles. Each doctor and hospital head should check the following sources of waste paper; old files, ledgers, correspondence, receipts, canceled checks, time cards, invoices, pamphlets, calendars, bulletins, obsolete catalogues, books and periodicals, containers, flower boxes and waste baskets.

Used paperboard containers are particularly in demand and the large number that come into hospitals regularly should be carefully conserved and turned back for reuse. Corrugated and solid fibre containers, and set-up boxes should be carefully collapsed, tied into bundles and turned over to a scrap or container dealer. More than a billion containers will be required in 1944 for the armed forces and lend-lease. While the armed forces in this country return containers for reuse, those overseas cannot. But every hospital can put its used containers back into circulation. In this lies the solution to the critical shortage of home-front containers, the only way to keep medical and hospital supplies moving, a way every hospital can help the war effort and itself.

Hospitals handle paper and other salvage in one of two methods: (1) Contract with a salvage dealer to collect, handle and dispose of all the hospital's salvage at regular intervals; or (2) The hospital itself collects the salvage, bales, bundles or shreds it and disposes of it direct to a dealer or mill. Both paper balers and shredders can be obtained today and hospitals seeking to purchase them should consult the local War Production Board officials.

Whatever method is in use today in the average hospital, there are four immediate and additional steps that should be taken to accelerate at once the waste paper collection.

(1) Appoint and hold responsible some member of the hospital personnel to head and correlate the paper salvage program.

(2) Take immediate steps to scrap old records by using the micro-film process.

(3) Publicize the waste paper drive with bulletins or posters in every department, with short talks and appeals to staff personnel.

(4) Set up a system of waste paper collection with every possible source of waste paper checked at regular intervals.

There is an immediate and firm market for all grades of waste paper, and its disposition is a source of actual dollar profit to the hospital and in many cases, makes available more floor and storage space, improves the appearance of all departments and lessens the fire hazard. In this connection, no waste paper should be burned until it is ascertained that it is not recoverable for war use. In cases where there is a question as to the disposition of confidential papers and records, consult the WPB office for information as to how this material may be recovered.

Hospitals can be especially helpful in the waste paper drive by publicizing the campaign to all doctors whose offices are fruitful and profitable sources of old magazines, newspapers, bulletins and records. It has been suggested that hospitals urge doctors to send or bring their waste paper to the particular hospital which they serve as one means of aiding them to dispose of it with a minimum of effort. Desks, both in doctors' offices and in hospitals, are generally good sources of scrap and should not be overlooked. One hospital supply firm recently urged all employees to "houseclean" desks and the result was an agreeable surprise.

WAR PRODUCTION BOARD.

News

Appointments by President Bowyer.

The Council of the Medical Society of Virginia, at its meeting in January, adopted a motion that a committee on Rehabilitation be appointed to cooperate with the Rehabilitation Division of the State Board of Education in its work for the rehabilitation of the physically impaired, and that this committee be composed of the present Committee on Public Relations and Medical Service, augmented by two men from Richmond. In accordance with this, Dr. Bowyer, President, has appointed the committee as follows: Chairman, Dr. William B. Porter, Richmond; Dr. J. M. Emmett, Clifton Forge; Dr. H. B. Mulholland, University; Dr. I. C. Riggin, Richmond; and Dr. T. Dewey Davis, Richmond.

Two other appointments by Dr. Bowyer are:

Dr. W. R. Whitman of Roanoke as delegate from

the Society to the Virginia State-wide Safety Conference to be held in Roanoke, May 25 and 26; and Dr. Herbert C. Lee of Richmond as representative from the Society on the Committee for Procurement and Assignment of Nursing Service in Virginia.

Roanoke Academy of Medicine.

The following program was presented at the meeting of the Academy held on March the 6th at Hotel Roanoke:

Activities of the Red Cross—Mr. Paul Buford, Roanoke

Cleidocranial Dysostosis: Report of a Case—Dr. W. E. Overcash and Dr. Fred G. Repass, Roanoke

Pleural Effusion—Dr. L. R. Broome, Catawba Sanatorium.

Dr. A. M. Groseclose and Dr. David S. Garner, both of Roanoke, are president and secretary, respectively.

Richmond Academy of Medicine.

At its March 14th meeting, the Section on the History of Medicine was host to the general membership and an interesting paper on "The Insanity of King George III" was presented by Major Manfred Guttmacher of Baltimore, well known psychiatrist and author, now stationed at Fort Eustis. Following the address, an informal reception was held.

Norfolk County Medical Society.

Colonel Daniel Borden, M.C., Commanding Officer at Fort Eustis, was the guest speaker before this Society at its meeting on March the 20th, his subject being "Personal Impressions on the Trial of the Medical Society of the District of Columbia".

The Virginia Society of Ophthalmology and Oto-Laryngology

Will hold its twenty-fifth annual meeting in Lynchburg on Saturday, April 29, under the presidency of Dr. E. T. Gatewood of Richmond. Dr. Meade Edmunds of Petersburg is secretary, and Dr. James R. Gorman of Lynchburg president-elect.

Guest speakers on this occasion will be Dr. John H. Dunnington of New York City, whose subject will be "Complications of Cataract Extraction", and Dr. Arthur T. Ward of Baltimore, who will speak on "Local Use of Sulfadiazine, Penicillin, Tyrothricin, and Radon in the Field of Oto-Laryngology".

The Tri-State Medical Association of the Carolinas and Virginia

Held a pleasant and interesting meeting in Charlotte, N. C., the last of February, under the presidency of Dr. Frank S. Johns of Richmond. At the closing session, Dr. K. B. Pace of Greenville, N. C., was installed as president for the coming year and it was voted to hold the 1945 convention in Columbia, S. C. Dr. O. B. Darden of Richmond and Dr. Richard B. Davis of Greensboro, N. C., were elected vice-presidents, and Dr. J. M. Northington of Charlotte was re-elected secretary-treasurer.

Married.

Dr. Fay Ashton Carmines of Odd and Miss Lillie Weeks Burns of Goldsboro, N. C., March 4th. Dr.

Carmines graduated from the Medical College of Virginia, class of December, 1943, and is now serving an internship at the College Hospitals.

Dr. William R. Dandridge, Charlottesville, and Miss Hetty Wray Hurd, Martinsville, March 3rd. Dr. Dandridge graduated from the University of Virginia, class of 1941, and is now director of Student Health at the University.

Dr. G. B. Arnold,

Lynchburg, former superintendent of the State Colony for Epileptics and Feeble-minded, was the principal speaker before the FBI quarterly law enforcement conference held in Lynchburg on March 9th. His subject was "Criminal Insanity".

American Public Health Association.

The Second Wartime Public Health Conference and the 73rd Annual Business Meeting of the Association will be held in New York City, October 3, 4, and 5. Meetings of related organizations will take place on Monday, October 2. Headquarters will be the Hotel Pennsylvania. The scientific program will be devoted to wartime emergency matters as they affect public health.

The Chairman of the Local Committee in Charge of Arrangements is New York City's Health Commissioner, Ernest L. Stebbins, M.D. The Chairman of the Program Committee is Reginald M. Atwater, M.D.

Major Sidney G. Page, M.C.,

Of Richmond, has returned from overseas duty and is now chief of the Medical Service at the Station Hospital, Indiantown Gap, Pa.

Promotions in the Service.

Promotions have recently been noted for the following Virginia doctors in Service:

To Major:

Dr. Herman Farber, Richmond.
Dr. James R. Grinels, Richmond.
Dr. Charles F. James, Appomattox.
Dr. E. Claude Jamison, Rocky Mount.
Dr. W. A. Seawell, Raven.
Dr. Harold B. Webb, Waynesboro.

To Captain:

Dr. Russell G. McAllister, Richmond.
Dr. R. R. Rudolph, Roanoke.

To Captain in the Navy (USN):

Dr. J. F. Terrell, class of '18, Medical College of Virginia.

To Commander (USNR):

Dr. J. B. Pettis, Staunton. Since entering the Service, Commander Pettis has been chief of the Neuropsychiatric service of the U. S. Naval Training Station at Bainbridge Maryland.

American Medical Association.

Official Call has been issued for the ninety-fourth annual session of the American Medical Association to be held in Chicago, June 12-16, under the presidency of Dr. James E. Paullin, of Atlanta. The House of Delegates will convene on the 12th, and the scientific assembly will open with the general meeting on the 13th. The various sections will begin their meetings on the 14th.

Dr. R. A. Vonderlehr,

Until recently with the Venereal Disease Control Division of the U. S. Public Health Service in Washington, D. C., has been transferred to San Juan, Puerto Rico, where he has been placed in charge of all of the work of the Public Health Service in the Caribbean area. He is also Medical Consultant for the United States to the Anglo-American Caribbean Commission.

Dr. Richard C. Neale,

Richmond, announces the removal of his offices and of the Physicians' Service Laboratories to the Medical Arts Building, this city.

Dr. W. H. Turner, Jr.,

Formerly of Round Hill, but now located at Oberlin, Ohio, is assisting in the Student Health Work at Oberlin College.

Early Diagnosis Campaign.

"To diagnose the greatest possible percentage of unsuspected cases of tuberculosis, to place these people under immediate and adequate care, to render them and the community safe from further spread of their disease, to rehabilitate every patient into productive members of society, these are our tasks. Diagnostic procedures that guarantee the maximum return in case finding are those that safely apply the clinical lessons of the past to the pressing problems of the present. No thorough clinician relies exclusively upon a solitary diagnostic aid, even when

the circumstances strongly tempt him to do so."

The above quotation from the April Tuberculosis Abstracts, is used for the purpose of calling attention to the fact that the mass x-ray surveys being conducted by the various tuberculosis associations throughout Virginia in the current Early Diagnosis Campaign are being used primarily as a screen to ferret out suspicious cases from the general population. The x-ray survey is the spearhead in the campaign, but the findings are submitted to the practicing physicians or the established chest clinics where the final diagnosis must be made through the application of the various diagnostic aids. Therefore, the value of these campaigns depends upon the careful follow-up of patients referred to the family physician or clinic.

"Either to diagnose tuberculosis when it does not exist or to fail to find it when it is present, is inexcusable. Nearly all errors in diagnosis are due to short-cuts or slipshod methods and may be avoided by employing every phase of a complete examination," according to Dr. A. J. Myers, author of the April Tuberculosis Abstract.

American Society for the Control of Cancer.

At the annual meeting of this Society in New York on March 11th, Dr. Frank E. Adair, New York, was elected president; Dr. Edwin P. Lehman, Charlottesville, vice-president; and Dr. Herman C. Pitts, Providence, R. I., Chairman of the Board of Directors.

New Coroner for Petersburg.

Dr. Walter L. Barnes, formerly connected with the U. S. Public Health Service, who recently located in Petersburg, has been appointed coroner, succeeding Dr. E. L. McGill, who resigned after having held the position since November, 1919. Dr. Barnes was also appointed to the position of city physician, succeeding Dr. C. W. Lynn who resigned several months ago.

Base Hospital 45 Veterans Association,

Composed of the members of the World War I McGuire Unit, held its twenty-fourth annual meeting on February 26th at the Medical College of Virginia. At the banquet, Colonel Stephens Graham, chief surgeon of General Hospital 45, World War II, was the principal speaker. Motion pictures of the present hospital unit, while serving in North

Africa, were shown by Mrs. Guy Horsley.

Dr. James H. Smith, Richmond, was elected commander of the Association.

Dr. J. J. Board,

Recently of Altavista, who has practiced for many years in Campbell County, has retired from practice and is now making his home in Rustburg.

Dr. G. Foard McGinnis,

Who was for several years director of the Bureau of Communicable Diseases of the Virginia Department of Health, and is now Director of Medical and Health Services with the American Red Cross, was recently elected to the Board of Directors of the National Health Council.

The American Board of Obstetrics and Gynecology

Announces that the general oral and pathology examinations (Part II) for all candidates will be conducted at Pittsburgh, by the entire Board from Wednesday, June, 7, through Tuesday, June 13, headquarters being at the Hotel William Penn. Candidates for reexamination in Part II must make written application to the Secretary's Office not later than April 15, 1944.

The Pittsburgh Obstetrical and Gynecological Society will hold an informal subscription dinner meeting at the Hotel William Penn, on Saturday evening, June 10, at 7:00 P. M. Visitors there for the examinations are cordially invited to make arrangements to attend. Reservations may be made by writing to Dr. Joseph A. Hepp, Secretary, at 121 University Place, Pittsburgh 13. An interesting program is being provided.

For further information and application blanks, address Dr. Paul Titus, secretary, 1015 Highland Building, Pittsburgh 6, Pa.

How to Live Longer.

Most civilian physicians are working too hard for comfort, in many instances literally "rushed to death". After all, the average age of doctors on the home front must be well up in the fifties.

They would be serving their country and their families better—and longer—by taking a little time out to follow an artistic hobby such as sketching, photographing, water coloring, painting, even whitening.

Art may be easier to take than exercise, yet affords you respite from strain and worry, at the same time offering limitless opportunities for self-expression and the joy of achievement!

Now is a good time to get ready to exhibit your artistic handicraft at the annual exhibition of the American Physicians' Art Association which will be held with the A.M.A. Session, June 12-16, 1944, in the gallery of the beautiful Grand Ballroom, Stevens Hotel, Chicago.

You can get full particulars by writing to the Secretary, Dr. F. H. Redewill, Flood Bldg., San Francisco, Calif.

Regardless of how long you've "dabbled in art", you can win a prize—and lighten the war's burden on your heart and arteries.

Medical College of Virginia News.

Dr. Everett I. Evans, associate professor of surgery, spoke before the University of Virginia Medical Society on "The Management of Traumatic Shock" on February 28.

The fifteenth annual Stuart McGuire lectures and spring post-graduate clinics will be held April 5 and 6. Dr. Winfred Overholser, superintendent of Saint Elizabeth's Hospital, Washington, D. C., and Lieutenant-Colonel William Menninger, Chief of the Division of Neuropsychiatry, United States Army, will be the lecturers. Dr. Overholser will speak on the night of April 5 on "Modern Trends in Psychiatry". Colonel Menninger will speak on the night of April 6 on "Psychiatric Problems in the Army". Beginning at ten o'clock in the morning and continuing through three o'clock in the afternoon, post-graduate clinics will be held on April 6. Six talks on psychiatric subjects are scheduled to be given by various members of the college faculty and others.

Dr. Harry Bear, dean of the school of dentistry; Dr. S. S. Arnim, assistant professor of operative dentistry; Dr. A. H. Fee, associate professor of operative dentistry; Dr. Charles F. Vallotton, assistant professor of operative dentistry; and Dr. P. J. Modjeski, assistant in crown and bridge prosthesis, attended the annual meeting of the American Association of Dental Schools in Chicago, March 20-22. Dean Bear, Dr. Arnim, and Dr. Fee also attended the International Association for Dental Research

in Chicago March 18 and 19, prior to the Association meeting.

News from the University of Virginia, Department of Medicine.

On February 18th the Virginia Alpha Chapter of Alpha Omega Alpha presented Dr. Theodore Squier, Associate Professor of Medicine at Marquette Medical School, in a lecture on "Hematologic Manifestations of Hypersensitive States".

The University of Virginia Medical Society held a meeting on February 28th. Dr. E. I. Evans of Richmond, Virginia, spoke on the subject "The Mechanism and Management of Traumatic Shock". At this meeting Dr. Samuel A. Vest was elected President and Dr. Carlton J. Casey was elected Secretary.

At the meeting of the American Society for the Control of Cancer in New York City on March 11, Dr. Edwin P. Lehman was elected Vice-president.

The Reading (Pa.) Eye, Ear, Nose and Throat Society

Will hold an open meeting Wednesday, April 19. The program includes wet and dry clinics, a squint clinic, conferences on conservation of hearing, on optical centers, four papers on motor disturbances (diagnosis, use of prisms, use of atropine, surgery), and a lecture "The Bronchial Tree".

Guest speakers will be Dr. George P. Guibor of Chicago, Mr. Austin B. Belgard of Chicago and Dr. Chevalier L. Jackson of Philadelphia.

For details address: Secretary, Dr. Paul C. Craig, 232 North Fifth Street, Reading, Pennsylvania.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

American Council on Education—Color and human nature.

A.M.A.—Handbook of nutrition—A symposium. 1943.

Army and Navy Books—How to exist on sea and land.

Baker, A. B.—An outline of Neuropathology. 1943.

Bercovitz, Z. Taylor, ed.—Clinical practical medicine, by 27 authors. 1944.

Bert, P.—Barometric pressure: Researches in experimental physiology. 1943.

Bessey, E. A.—A textbook of mycology, 1939.

Breckenridge, Marian E.—Child development. 1943.

Cason, Clarence—Ninety degrees in the shade. 1935.

Chesney, A. M.—The Johns Hopkins Hospital and the Johns Hopkins University School of Medicine. 1943.

Child Study Association of America—Parents' Questions. 1936.

Colcord, Joanna—Your community. 1941.

Clarke, E. K.—Mental hygiene for community nursing. 1942.

Couch, W. T. ed.—Culture in the South. 1935.

Curran, Desmond—Psychological medicine, a short introduction to psychiatry with an appendix *War-Time Psychiatry*.

Daniels, Jonathan—A Southerner discovers the South. 1941.

Davis, Allison—Deep South. 1941.

Davis, John E.—Principles and practice of rehabilitation. 1943.

Dewey, Martin—Practical orthodontics. 1942.

Draper, George—Human constitution in clinical medicine. 1943.

Erdtman, G.—Introduction to pollen analysis. 1943.

Federal Writers' Project—These are our lives. 1939.

Fischer, Martin—In praise of man. 1943.

Foertsch, Hermann—The art of modern warfare. 1940.

Frensten & Calderwood—Orthopedic nursing. 1943.

Garrett, Annette—Interviewing—Its principles and methods. 1942.

Graves, John T.—The fighting South. 1943.

Guilford, J. P. ed.—Fields of psychology. 1940.

Hagood, Margaret J.—Mothers of the South. 1939.

Heilbrunn, L. V.—Heilbrunn's General Physiology. 2nd. ed. 1944.

Hess and Lundeen—The premature infant. 1941.

Hilgard, E. R.—Conditioning and learning.

Hodgson, V. H.—Supervision in public health nursing. 1939.

Huff and Strong—Life through the ages.

Jenkins and Hartung—Chemistry of organic medicinal products.

Jersild, A. T.—Child psychology. 1932.

Johnson, C. S.—Patterns of negro segregation.

Johnson, Gerald W.—The wasted land. 1938.

Kyte, George C.—How to supervise. 1930.

Lawton, George, ed.—New goals for old age. 1943.

Leonardo, Richard A.—The history of surgery. 1943.

Levinson, S. A.—Clinical laboratory diagnosis. 2nd. ed.

Lynch, Theresa—Communicable disease nursing. 1942.

McBurney, J. H.—Principles and methods of discussion. 1939.

- McCombs, R. P.—Internal medicine in general practice. 1943.
- Makins, G. H.—On gunshot injuries to the blood vessels, founded on experience gained in France during the Great War, 1914-1918.
- Marriott and Jeans—Infant nutrition.
- Matthew, William Diller—Climate and evolution. 2nd. ed. 1939.
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- Mossman—Activity concept.
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Dr. I. C. Riffin,

State Health Commissioner of Virginia, was re-elected president of the Association of State and Territorial Health Officers, at its meeting the latter part of March.

Dr. Parran Re-appointed.

President Roosevelt has just nominated Thomas Parran to be surgeon-general of the U. S. Public Health Service for another term of four years.

Obituaries

Dr. David Leighton Kinsolving,

Prominent Southwestern Virginia physician, died March 12th at the University of Virginia Hospital. He was seventy-seven years of age and a graduate of the former University College of Medicine, Richmond, in 1896. Except for two short periods, Dr. Kinsolving had practiced in Washington County, and in the latter years he had made his home at Abingdon. He served in the Medical Corps in World War I, following which he spent a short time in Colorado. Dr. Kinsolving was a Mason, a Knights Templar, secretary of the Washington County Board of Health, and had been county physician for a long period. He had been a member of the Medical Society of Virginia for forty-eight years. A daughter survives him.

Dr. Leigh Buckner,

For many years a prominent member of the medical profession in Roanoke, died December 25, after a long illness. He was eighty-two years of age and a graduate in medicine from the University of Maryland, Baltimore, in 1885. He served for some time on the staff of the Roanoke Hospital and had been a member of the Medical Society of Virginia for fifty-seven years. His wife and a daughter survive him.

Dr. Claude Emmett Stump,

Richmond, died March 6th, at the age of fifty-one. He was a graduate of the Medical College of Virginia, class of 1920, and had practiced at Pochontas until about ten year ago when he retired because of ill health and moved to Richmond.

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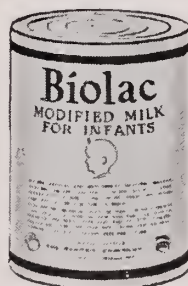


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Later you dream — dreams that you don't tell about. And in the morning you wake up with that funny, empty feeling in your stomach.

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Poor little guy. We — all of us — wish there were something we could do. Perhaps there is. Why shouldn't it be this?

We can resolve that the plans your father had for you shall remain within your reach, that you shall have the chance to grow and learn, that your opportunities will be bounded only by your own get-up-and-go, that you will progress and prosper in direct relation to your own ability — in a land of freedom and opportunity.

Those are the things your Dad valued, the things for which he gave his life. Though some may strive to change all that — provide you with the "benefits" of an all-powerful government, the "advantages" of regimentation, the "blessings" of bureaucracy — we can resolve they won't succeed.

★ ★ ★

You, son, won't read these words, and if you did, they wouldn't mean much to you now. But your father's friends — known and unknown — are making you a promise, just the same.

You may never hear it from their lips. But if you were older you would read it in their faces — recognize it in their spirit. They are determined to keep America free. To keep it a land in which government is the servant, not the master of the people. To keep it the kind of America your Dad wanted to preserve — for you.

Virginia

MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

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A PSYCHOSOMATIC PROBLEM

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Guest Editorial

Little Nazi-Made Zombies

I HAPPENED to be in Europe during the summer of 1926. In France and Belgium it was evident everywhere one went that there was a dearth of middle-aged men. Women were managing factories and stores and occupying other business positions usually held by men. This made me wonder about the status of the children born during the first World War, who were then from eight to twelve years of age. But few of them were seen upon the streets, and those who were casually observed appeared to be well and happy. The others, orphans or otherwise, were probably in schools, and no definite investigation of them was made by me at that time.

During the summer of 1931, I attended the International Neurological Congress in Berne, Switzerland, and I determined to inquire as well as I could into the condition of the first World War children who were then adolescents from thirteen to seventeen years of age. French, Dutch, Swiss, Belgian, and English neuropsychiatrists, more or less familiar with the situation, were interviewed. I was astonished to find that in their opinion these children, born during a period of horror, distress, massacre, and rape, were about as normal mentally and physically as those born during the piping times of peace.

Later more superficial inquiry was made of those who had visited Spain since the Civil War, concerning the young children born during that period. These children seemed to be below par physically and to have less high spirits than normal children. This condition was attributed to mal-nutrition because of the rapid improvement made when they were better fed.

And now we have a most interesting report of the children of Nazi-occupied Europe from 1939 through the school period of 1941. In a paper in *Psychosomatic Medicine*, July 1943, Marie Helen Mercier, M.D., and J. Louise Despert, M.D., state among other observations that shortly after the beginning of the scarcity of food, an increase in delinquency and stealing was noted, especially in adolescents. The children who had begun to steal through necessity, soon began to take things of no use whatsoever. Statistics computed on 500 children indicated that more than half showed signs of nutritional deficiency. Children who were observed in foster homes, these investigators said, showed indications of deep-seated (psychic) trauma though many presented no peculiarity except that "they lacked gaiety and enthusiasm and *they never smiled*." Think of it, no bright eyes shining, no merry laughter, none of youth's spontaneity.

The question of the effect of a global war upon its generation of children is, of course, important, but the question of its effect upon children of the Nazi-occupied countries is of paramount importance. These, with the children of unoccupied countries, shall have the burden and responsibility of reorganizing the world that is to be, and at the same time, they shall have the greatest opportunity ever given a generation.

What are we doing and what shall we do to see that they shall not be found wanting? The answer is not easy or specific. No one mind, the mind of no one nation and of no one race, can truly comprehend, much less solve the problem. It is not a matter merely of vitamin feeding plus some inelastic rules plus preconceived charts and graphs, or plus anything else. The planning must be international and interracial, and to be everlasting, must be everchanging.

Let the statesman and the mechanic, the business executive and the laborer, the economist and the educator, the lawyer and the prelate do what can be done with their special abilities, and still there looms large the need for those who through love of children, and those who because of a knowledge of eugenics, obstetrics, paediatrics, psychology, psychiatry, child-guidance, and social service, to help the oncoming and ever oncoming generation.

We shall need an interglobal wise, unselfish organization of those who can speak a common language and have a common purpose which will receive the common support of the peoples of the earth. Such an organization is no more impossible than was the birth and fruition of the Red Cross.

I close by asking, shall we doom the future by our present inertia? It seems a puerile expression of our adulthood to foster a world of little zombies.

BEVERLEY R. TUCKER, M.D.

Richmond, Virginia.

Floral Eponym (15)

PAEON

Paeon (Paeon or Païëon) was classed by Homer among the Olympian gods of whom he was, as his name implies, the "healer". Later the name was applied to Aesculapius, then to any god who might repair or avert evil of any kind, as for instance, to Apollo. Paeans were chants in honor of Apollo, sung to deprecate misfortune in battle or to avert disease.

When Mars was wounded by Diomedes, he bellowed with pain and betook himself to Olympus. Jove sternly reprimanded him and bade Paeon, the family physician, heal him, which he did.

The genus, Peony, the gorgeous flower which brightens our gardens in the Spring, is named for him.

CORRECTION OF MULTIPLE DEFORMITIES OF NOSE*

WILLIAM LAWRENCE GATEWOOD, M.D.,
New York, New York.

Because the nose protrudes from the center of the face any deformity connected with it may be conspicuous. Malformations of appreciable degree involving the external nose can interfere with the social and economic life of the individual while deformities of the internal nose may seriously impair nasal function. The external appearance of the nose is important, but it is of less importance than is the fundamental consideration of its function. Adequate breathing space is very necessary because it promotes good drainage and proper ventilation of the respiratory tract which are conducive to normal development and good health. An external deformity is often combined with partial or total obstruction internally. The septum may bulge into both nasal passages, interfere with normal breathing and cause the external nose to deviate from the midline of the face.

In the long convex nose with a drooping tip and subluxation of the lower part of the septum obstructed breathing may be pronounced. Here the chief factor in bringing about the obstruction does not lie in the malformation of the septum alone but in the overhanging tip. Until the tip is elevated, the greatest source of obstruction will still remain. Only when the septal operation is combined with that of lifting the tip can the obstruction be relieved. There are other cases in which there is a marked drooping of the extreme tip of the nose with a short columella without deviation of the nasal septum. These cases do not require a septal operation. Lengthening the columella and lifting the tip will suffice to relieve the obstructed breathing.

Knowledge of the normal bony and cartilaginous framework of the nose is necessary to a full understanding of the multiple deformities of the inner and the outer nose. The soft structures are supported by a skeleton of bones and cartilage symmetrically arranged. The upper third of the external support is composed of two nasal bones which meet to form the bridge, the perpendicular plate of the ethmoidal bone, and the nasal processes of the maxillae. The remainder of the external support consists of the

upper and lower lateral cartilages, the triangular cartilage of the septum and the columella. The internal nose is divided into two compartments by the septum which is composed of bone and cartilage. An injury which dislocates either the external or internal bone or cartilage may result in external deformity, interference with breathing and prevent proper drainage of the nasal secretions.

Many nasal deformities are caused by fractures which occur in early life. The very small child while learning to walk and the older child at play may sustain a firm blow on the nose. This may result in a fracture which will often interfere with the normal development of the nose if displaced parts



Profile view before operation. Elongated nose with depression immediately above tip. The breathing passages are obstructed due to thickened and deflected septum.

Profile view after operation. Resection of the thickened and deviated septum with slight lifting of the tip produced a good functioning nose. A cartilaginous graft which filled in the depressed area corrected the external deformity.

do not receive proper attention at the time of injury or shortly following it. As a result of such an injury partial or complete nasal obstruction may follow and because of the obstruction the child's general condition will often suffer. There may be underdevelopment of the chest with a tendency to upper and lower respiratory infection. The necessity of early repair is obviously very important. A fracture of the nose, as of any other part of the body, should be reduced as soon as possible. This should be done preferably within forty-eight hours of the accident to prevent deformity and preserve normal function, provided there is no coexisting injury such as frac-

*From the Department of Surgery (Otorhinolaryngology), New York Polyclinic Medical School and Hospital.



Profile view before operation. Convex dorsum with drooping tip. A thickened and scoliosed septum, together with the drooping tip produces impaired nasal breathing.



Profile view after operation. Correction of external deformity improved the appearance of the nose. Resection of the cartilaginous and bony septum with lifting of the tip produced a normally functioning nose.



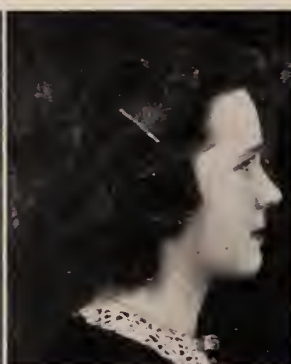
Full view before operation. The drooping tip shortens the upper lip, and interferes with normal breathing.



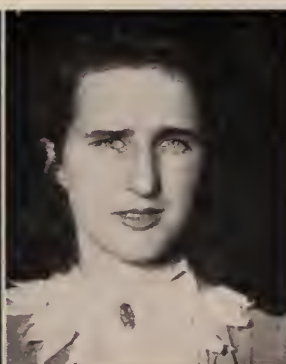
Full view after operation. The lifted tip facilitates proper breathing and lengthens the upper lip.



Profile view before operation. Humped nose with deviated and hanging septum. Nasal breathing obstructed.



Profile view after operation. Resection of the nasal septum and lifting the tip produced a good functional result, while lowering the bridge, narrowing and shortening the nose improved its appearance.



Full view before operation. The elongated tip interferes with normal breathing, shortens the upper lip and spoils the appearance of the mouth.



Full view after operation. The combined internal and external correction improved the function of the nose as well as its appearance.



Profile view before operation. Depression of lower third of nose which resulted from an infected hematoma of septum due to trauma.



Profile after operation. Cartilage and bone from the deviated septum filled in depression after the nose was straightened, narrowed and lifted.



Full view before operation. Note the scoiotic and depressed appearance of the dorsum.



Full view after operation. The deviated and depressed dorsum is straight and function of nose is restored.

ture of the skull, severe shock, or neurological damage. Any of these should preclude an attempt at early repair.

With reference to the correction of the long-standing deformity, whatever the defect, it must be analyzed with proper regard to the accepted criteria of



Profile view before operation. Elongated convex nose with sharp pointed tip. Breathing is markedly obstructed due to drooping tip. Note how half of the nostril is obstructed because of this drooping. The nasal septum is straight.

After operation. Removing the convex dorsum with shortening and lifting the tip produced a good functioning nose and improved its appearance.

form and proportion. The removal of excess tissue or the supply of structural deficiency must conform to the requirements which will result in the type of nose suitable to the outline of the face. Not infrequently the angle of the nose to the face is a determining factor in the facial harmony.

The operative procedure required depends upon the deformity to be corrected. However, if the skin is intact the operation is usually planned so that external incisions will not be required.

The anatomical relationship between the inner and outer nose is so intimate that deformities and malformations of the external nose frequently affect its function as well as its contour. Though this relationship is understood, it seems necessary to stress the need of correcting the inner and outer defects of the nose in one and the same operation. For instance, when an injury to the nose is sustained which results in a deflected septum and a sagging of the bridge (saddle nose) a submucous resection of the septum is required. The cartilage and bone, which has been removed from the septum, should be utilized to serve as the graft to fill in the depression on the dorsum of the nose. In patients with this type of combined inner and outer injury to the nose

with external deformity and obstructed nasal breathing of long standing, not only should the intranasal obstruction be relieved but attention should be given simultaneously to the correction of the external deformity for the relief of the obstruction. If the external correction is not included in the operative procedure, a second operation is required to build up the depression. This operation will necessarily have to be more extensive because the cartilage and bone from the septum will no longer be available for the graft. Another part of the body will then have to be utilized to supply the graft which is usually taken from an ear, a rib, the crest of the ilium or from a donor.

Attention is directed to a number of conditions in which the surgery of the inner and the outer nose can and should be combined. Aesthetic and functional results can be had in the same operation in such conditions as: (a) old fractures with displacement; (b) depressed or saddle nose; (c) developmental defects. The depressed or saddle nose which follows nasal injury frequently results from the breaking down of an infected septal hematoma. If the hematoma is emptied shortly after its formation,



Before operation. Convex nose with obstructed breathing due to deviated septum.

After operation. Septum resection and correction of external deformity resulted in a good functioning nose and an improvement in its appearance.

infection is less likely to occur. Septal abscesses, resulting from the formation of a hematoma, may in very rare instances produce meningitis and this possibility should be kept in mind.

Most nasal malformations are congenital, developmental or traumatic. A small number is due to disease. The external deformities most frequently seen are the humped or hooked, the twisted or deflected,



Profile view before operation. Elongated convex nose with tucked in tip. Nasal breathing is obstructed due to deviation of the septum and depressed tip.

Profile view after operation. Lowering of the bridge and shortening the nose improved the patient's appearance while correcting the septal obstruction and lifting the tip produced good function.



Full view before operation. The drooping tip and deviated septum interfere with breathing.



Full view after operation. The deviated septum has been resected, the convex dorsum removed, and the tip elevated. Good function and improved appearance is the result.

the depressed or saddle nose, and the large and bulbous tip with malformations of the columella. In correcting these conditions consideration should be given to the plan of procedure to include a good functional, as well as a good cosmetic, result. The procedure will necessarily have to vary, depending upon the type of deformity. Adequate preparation includes a checkup on the general condition of the patient, an examination of the sinuses and a thorough planning of the operation. In scheduling the operation, sufficient time should be allowed as these operations are tedious and time consuming. To obtain the desired result, forethought, ingenuity, patience, and strict attention to details are most essential.

The obstructed nose, due to a thick deviated sep-



Profile view before operation. Very high convex dorsum with sharp pointed tip and hanging septum.

Profile view after operation. Dorsum lowered, septum shortened and tip lifted and rounded.



Profile view before operation. High dorsal convexity.



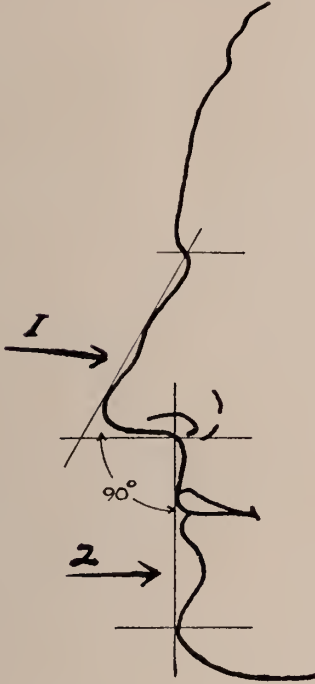
Profile view after operation. Dorsum lowered.

tum with marked sinking of the bridge, is a type that will require correction of the septal deformity and filling-in of the dorsal defect, utilizing the re-

moved cartilage or bone as a graft. The humped or hooked nose, with a twist and deflection of the tip, is corrected by sawing or chiseling away the hump, sawing through the nasal processes of the superior maxillae, shortening the septum, adjusting the bony and cartilaginous structures and lifting the tip. In the correction of the large and bulbous tip with malformations of the columella, the amount of triangular and lower lateral cartilages requiring adjustment and removal will depend upon the shape and outline of the nasal orifices. There are a variety of these deformities and in each operative procedure it will be necessary to conform to the requirements of the individual case. Sound surgical judgment is essential and there are few fields of surgery in which an artistic sense is so much needed. This is especially exemplified in those cases of deformity which sometimes result in scar tissue formation due to folliculitis of the nasal orifices.

The photographs shown will assist in helping to visualize the type of case that requires a combined operation on the inner and the outer nose.

In the diagram below the septolabial angle indicated by the curved line drawn from the center of the tip of the nose to the center of the closed lips varies



PROFILE VIEW OF THE FACE

from 90 to 105 degrees. The long nose will shorten this angle and cause the tip of the nose to overhang the upper lip, spoil the appearance of the mouth and interfere with breathing. A very short nose increases the angle with a marked accentuation of the upper lip. The best measurement is about 90 degrees.

Another mathematical guide which may be used to determine the proper length of the nose can be arrived at through two simple measurements:

- (1) A line from the root of the nose to its tip.
- (2) A line from the base of the columella to the center or apex of the chin.

Line (1) and line (2) should be equal lengths or line (1) slightly shorter, depending upon the vertical dimension of the chin.

COMMENT

In addition to the satisfactory functional results obtained in the correction of nasal malformations (internal and external) new avenues of personal and professional experiences are opened to the patient. The entire outlook on life is often improved, and particularly is this true in the early and middle aged groups. An otherwise good featured face may be spoiled by a conspicuous deformity of the nose. These patients are often hypersensitive and introverted. The good results, which can be had in this field of corrective surgery, are well worth the time and effort. They are: improvement in the function of the nose which should make less likely the development of respiratory infections, improvement in the appearance of the patient, and the elevation of morale with enhancement of personality to the degree that the individual finds it less difficult to make proper social and business contacts.

CONCLUDING COMMENT

The necessity of combining surgery of the outer nose with that of the inner nose is essential to the proper correction of certain multiple deformities of the nose. This combined procedure, when properly executed, will result in a better functioning respiratory tract and an improvement in the appearance and mental state of the patient.

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111 East 61st Street.

ACUTE SURGICAL CONDITIONS COMPLICATING MALIGNANCY*

JULIAN L. RAWLS, M.D.,
Norfolk, Virginia.

From time immemorial the word "cancer" has carried a sinister significance. To the general public it is an absolutely hopeless prognosis. It means a long drawn out wasting disease, with weeks, and sometimes months, of suffering: a disease for which there is no ultimate relief other than death. Many of our professional brethren have the same feeling of utter hopelessness, and that, in spite of the fact that several years ago the American College of Surgeons sponsored a "Cured Cancer Club". By cured they meant a patient who was entirely free from any evidence of the disease five years after it had first been diagnosed and treated. To become a member of this club one must have pathological evidence that the original growth was cancer. No clinical diagnosis was accepted regardless of how self evident the condition was. The club now numbers several thousand individuals who have met all of these requirements.

The change in the treatment of cancer in the last few years has added something to this hopeful outlook. The addition of radium and x-ray has saved many lives that would have been considered hopeless a few years ago.

We now know that cancers of the breast carry from 25 to 75 per cent five year cures, depending upon whether there is axillary involvement or whether the tumor is limited to the breast. Cancer of the cervix has almost as high a salvage if treated with radium and x-ray alone and surgery is not attempted. We have long known that skin cancers, in nearly 85 per cent of the cases, will respond to radium, x-ray, surgery or electrical coagulation if seen while they are still limited to the original lesion and metastases have not occurred.

With these statistics well known, there is no excuse for anyone to take the position that if an acute surgical condition superimposes itself upon a cancer victim, even though the cancer is still active, there is no reason for treating the condition because the patient is hopelessly ill anyway. With this in mind, I have been prompted to report a few clinical histories to prove that it is worth while to overlook the fact that the patient has, or has had, cancer, and

treat the acute condition as though the patient were an otherwise normal individual.

Mrs. C. W., age 28 years. First seen in the office in 1935 when she was 22 years old with an erosion on the cervix which was cauterized. She had one child and had had an abdominal pelvic operation two years before. She was sent back in the office in 1941 with an erosion which involved almost the entire cervix. The uterus was not enlarged and there was no fixation. The pathologist reported the biopsy as a squamous cell carcinoma; clinically it was a Schmidt 2. She was given 5,716 mgm. hours of radium in March, 1941. Following this she began to run a high temperature and was given transfusions and sulfathiazole without any influence on her temperature. She had a mass in the right side of her pelvis with no tendency to localize in the cul-de-sac. It was felt that the mass was definitely in the folds of the broad ligament and she was sent home for observation. On May 9, 1941, she was returned to the hospital and an exploratory operation was performed. A large tubo-ovarian abscess was found and the right tube and ovary were removed. Apparently the left tube and ovary had been removed at the first operation. From June 19 to August 18, 1941, she was given 10,500 "r" over four 8 x 10 pelvic portals. She has been kept under fairly constant observation ever since and has shown no evidence of recurrence of her carcinoma—that, in spite of the fact that she was only 28 years old when the diagnosis was first made.

Mrs. R. B. B., white, age 52 years. First seen October 27, 1942, with a squamous cell carcinoma of the cervix, Schmidt 1. She was given 7,560 mgm. hours of radium. As it was such an early case she was not immediately given deep x-ray therapy, but from January 5 to March 17, 1943, she was given 10,000 "r" through four 8 x 10 pelvic portals. On March 26 she complained of an acutely tender mass in the right side of her pelvis. Her W. B. C. was 10,050; PMN 73 per cent. On April 6, 1943, the mass was explored and proved to be a ruptured appendiceal abscess. The pus was evacuated; the abscess cavity washed out, dusted with sulfanilamide powder and the abdomen closed without drainage. She was last seen on August 17,

*Read before the annual meeting of the Medical Society of Virginia, at Roanoke, October 25-27, 1943.

1943, when she was apparently entirely well. It has been less than a year since she was first seen, so we can make no claim for cure of the cancer. What we are claiming is that an acute ruptured appendix superimposed itself in a patient who had recently been treated for cancer of the cervix.

C. S., colored, age 50 years. First seen on September 22, 1941, with an epidermoid carcinoma of the cervix, Schmidt 2. She was given 7,200 mgm. hours of radium without any x-ray. Her pelvic condition continued entirely satisfactory, but in March, 1943, she came in complaining of pain in her upper right quadrant. Since metastasis to the liver is a rather unusual occurrence in carcinoma of the cervix, it was felt that this was a gall-bladder infection and in no way associated with her cancer. An x-ray showed a non-functioning gall-bladder. She was explored on April 15, 1943, and a gall-bladder containing four stones was removed. An examination of her pelvis through the incision failed to show any evidence of involvement in the pelvis.

R. C. S., white, age 36 years. This case illustrates an opposite condition. This woman had a cancer of the cervix associated with an acute surgical condition which over-shadowed the malignancy. She first came in in December, 1933, because of irregular uterine bleeding and spotting. At the time she had an enlarged thyroid and a B. M. R. of plus 13 with some nervousness and some acceleration in her pulse rate. She was sent in the hospital with the request that a biopsy be made of an ulceration on her cervix but came back to the office two days later, very much disturbed because she said the gynecological service had ignored her pelvic condition and referred her to the surgical service for surgery. The biopsy proved to be squamous cell carcinoma and she was given a total of 5,835 mgm. hours of radium in two sittings. She was not given x-ray. In March, 1935, as she was showing no evidence of cervical malignancy, a thyroidectomy was done on her. She later married and was last seen in September, 1940, seven years after she was treated, with no evidence of malignancy.

The following case is quite interesting and I still am not sure of the pathological picture. B. P., colored, age 38 years. First came in in November, 1942. She had a squamous cell carcinoma of the cervical stump, Schmidt 2. In June, 1939, she presumably had had a supravaginal hysterectomy as she had not menstruated since that operation. On

her hospital admission she had a four plus Wassermann. She was given 6,935 mgm. hours of radium at one sitting. We have a comment that she should have deep x-ray therapy but she lived out in the country, transportation was very difficult (after gas rationing went into effect) so it was all we could do to get her to the V. D. Clinic for treatment. In April, 1943, she reported for observation and stated that she was having bleeding from the rectum. The examination showed a large ulcer on the anterior rectal wall. There was no evidence of any involvement of the cervix and the indurated area did not involve the vaginal mucosa. We thought we were dealing with an entirely separate and distinct malignant lesion, probably an adeno-carcinoma of the bowel, and sent her in the hospital planning to do a colostomy on her and later remove the rectum and probably the cervical stump. A superficial biopsy was reported as showing no evidence of carcinoma, so the patient was anesthetized and a biopsy was taken through the entire thickness of the ulcerated lesion. Doctor Strauss reported that there was no evidence of malignancy but the sections were highly suspicious of gumma. He did not know the woman had a positive Wassermann. She was sent home and her anti-leucic treatment intensified. She was last seen on October 3, 1943. The rectal lesion was still present and she had developed a recto-vaginal fistula at the upper edge of the ulcerative lesion. I believe now that she would be better off if we had carried out our original intention and had done a colostomy and removed the rectum, even if we had operated for a syphilitic lesion.

Mrs. J. G., white, age 58 years. This case is a malignancy superimposed on an acute surgical condition. She had one pregnancy when she was 19 years old, had been delivered by Cesarean section and had had a supravaginal hysterectomy, so for forty years she had not had any vaginal bleeding. About two months before I first saw her she was admitted to the hospital with a fractured hip and, while convalescing from this, developed a gangrenous gall-bladder which was drained. Following that she had an acute myocardial failure, and a short time later began with vaginal bleeding. In July, 1941, she was given 5,300 mgm. hours of radium for a squamous cell carcinoma of the cervical stump, Schmidt 2 plus. Owing to her general condition, her age, and the fact that she had no pelvic organs, she was not given x-ray. In June, 1942, she was

returned to the hospital because of a recurrence of her carcinoma in the anterior vaginal wall and around the meatus. Deep x-ray was rather belatedly started on her but she tolerated it so poorly and became so nauseated it was discontinued. She died on November 15, 1942.

708 Medical Arts Building.

DISCUSSION

DR. JOSEPH D. COLLINS, Portsmouth: I am sure that all of us have enjoyed Dr. Rawls' paper and the point which he has brought up is of utmost importance. The idea that a cancer victim is not entitled to treatment for intercurrent pathology is certainly a wrong one. Unfortunately the same notion prevails with regard to syphilis. Often various symptoms and diseases are ignored and allowed to go untreated just because the patient has a positive Wassermann or Kahn test. Dr. Rawls has rightly said that the word "cancer" carries a sinister significance, and to the average individual a diagnosis of cancer is equivalent to pronouncing a death sentence.

This no doubt is due to the mistaken idea that the prognosis of cancer is always hopeless. How often do we hear the expression that when radium is used the patient always dies. Unfortunately the fatal cases are the ones which receive the most publicity. If it were possible for the public to be informed about the cured cancers I am sure a great deal of pessimism regarding cancer would be dissipated. Most individuals are very proud of their recovery from surgical operations and many delight in recounting the number of gall stones removed or the length of their appendix, but it is seldom indeed that one sees a patient who will even discuss his operation or any other procedure performed for the cure of his cancer. On the other hand, the patient who recovers from cancer usually keeps silent and will frequently say that his hospitalization was due to some other disease. This is no doubt due to the mistaken idea that the patient who has had cancer, although cured, is more or less disgraced. It is looked upon as a stigma which should not be discussed or referred to in his presence.

The cases which Dr. Rawls has cited are certainly most interesting and these patients are to be congratulated on his promptness in recognizing the conditions present and his competency in correcting them.

War-Time Graduate Medical Meetings

Are held under the auspices of the American Medical Association, the American College of Physicians, and the American College of Surgeons. Civilian as well as Service physicians are invited to attend and participate in the program.

The May meetings in Virginia are as follows:

FORT EUSTIS, VIRGINIA

- May 11—Psychosomatic Medicine—Dr. Claude L. Neale.
- May 25—Anesthesia—Selection and Contra-indications—Captain James P. Curran, M.C., U.S.A.

CAMP LEE, VIRGINIA

- May 5—Rheumatism—Captain Joseph L. Hollander, M.C., U.S.A.
- May 12—Respiratory Diseases and their Treatment by Chemotherapeutic Agents—Dr. Henry B. Mulholland.
- May 19—Traumatic Lesions of the Abdomen—Dr. Carrington Williams.
- May 26—Modern Diagnosis and Treatment of Pulmonary Tuberculosis—Dr. A. Barklie Coulter.

- June 2—Aviation Medicine, General—Dr. Ludwig G. Lederer.

LANGLEY FIELD, VIRGINIA

- May 2—Malaria (Clinical Manifestations and Therapy)—Dr. Carlton J. Casey.
- May 9—Psychosomatic Medicine—Lt. Sidney U. Wenger, M.C., U.S.A.
- May 16—Traumatic Arthritis—Lt. Commander Judson D. Wilson, M.C., U.S.N.R.
- May 23—Rheumatism—Major Terence L. Tyson, M.C., U.S.A.
- May 30—Neurocirculatory Compression of the Scalenus Anticus Muscle—Dr. Robert L. Payne.
- June 6—Modern Diagnosis and Treatment of Pulmonary Tuberculosis—Dr. Dean B. Cole.
- June 13—Respiratory Diseases and their Modern Treatment—Dr. Porter P. Vinson.
- June 20—Treatment of Cardiovascular Emergencies—Dr. William B. Porter.

NORFOLK NAVAL HOSPITAL, PORTSMOUTH, VIRGINIA

- May 11—Psychosomatic Medicine—Captain Charles A. Spangler, M.C., U.S.A.
- May 25—Drainage of the Pleura with Particular Relation to Chest Injuries—Dr. I. A. Bigger.

RECENT ADVANCES IN THE PHARMACOLOGY OF NICOTINE*

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and

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During the past decade a number of investigations on the pharmacology of cigarette smoke have been made in our laboratory, and it is our wish to summarize here the results of those observations which might be of especial interest to physicians. Since nicotine is usually considered to be the most important constituent of cigarette smoke insofar as the systemic effects of smoking are concerned, this discussion will be largely limited to studies revolving about this one single component.

RESUMÉ OF PERTINENT GENERAL INFORMATION

Nicotine in the Cigarette and in the Cigarette Smoke.—The average American cigarette weighs

On an average, however, it may be assumed that the puff volume is about 35 cc. taken at minute intervals for a total of ten puffs per cigarette. When a cigarette is mechanically smoked under these conditions to a butt length of 23 mm., it is found that approximately 35 per cent of the nicotine in the tobacco smoked is completely destroyed at the burning tip; an equal amount goes off in what is called the "side stream" smoke which billows into the atmosphere from the burning tip; 6 per cent is collected by filtration into the butt, and 22 per cent is transferred into the "main stream" smoke.³ It is this latter smoke with which we are primarily concerned, since this is the fraction which is taken into the

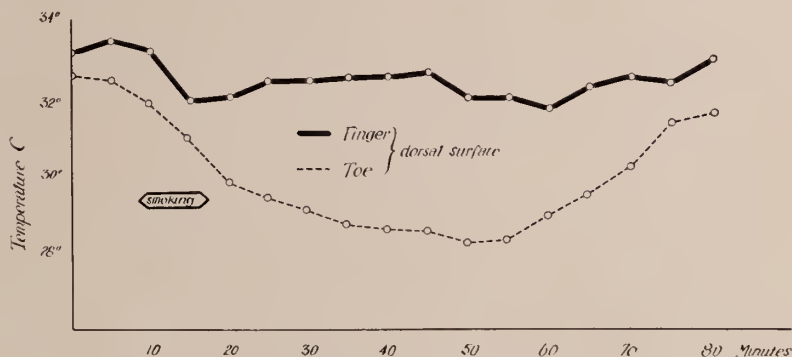


Fig. 1. Effect of cigarette smoking on the peripheral temperature of an habitual inhaling smoker. (7)

one gram, is 70 mm. long, and 26.6 mm. in circumference. It contains a mixture of tobaccos, some domestic and some Turkish, so proportioned that the finished product contains about 2 per cent nicotine by weight. This corresponds to about 20 mg. of nicotine per cigarette. In addition, there is present a hygroscopic agent and flavorings characteristic of each brand. The paper consists of pure cellulose rendered to proper porosity by admixture with calcium carbonate. Contrary to popular belief no oxidizing substance such as potassium nitrate is added to the paper or tobacco.^{1, 2}

Smoking habits vary widely between individuals.

mouth and, usually, subsequently inhaled. The 22 per cent carry-over of nicotine in the "main stream" smoke corresponds to about 3 mg. In other words, of the 20 mg. of nicotine present in the whole cigarette, 3 mg. are taken into the body by the average smoker.

Absorption of Nicotine During Smoking.—The question naturally arises as to how much of this 3 mg. of nicotine in the main stream smoke is absorbed into the blood stream. Recent studies have shown that in the non-inhaler only a small fraction is retained, amounting to approximately 12 per cent.⁴ On inhalation, however, most of the nicotine is absorbed by the respiratory mucous membrane, the actual values running as high as 98 per cent.^{4, 5, 6}

*Read before the annual meeting of the Medical Society of Virginia, at Roanoke, October 25-27, 1943.

RESUMÉ OF EXPERIMENTS FROM THIS
LABORATORY

Systemic Effects of Smoking.—Our investigations of the systemic effects of smoking have been limited chiefly to its effects on the circulatory system. Weatherby,⁷ working in this laboratory, found, in

changes to a reflex mechanism activated by irritation of the respiratory mucous membrane. In light of the observations discussed above, we cannot agree with this concept which would exclude nicotine as a factor of major significance in regard to circulatory changes following smoking. Further evidence on the

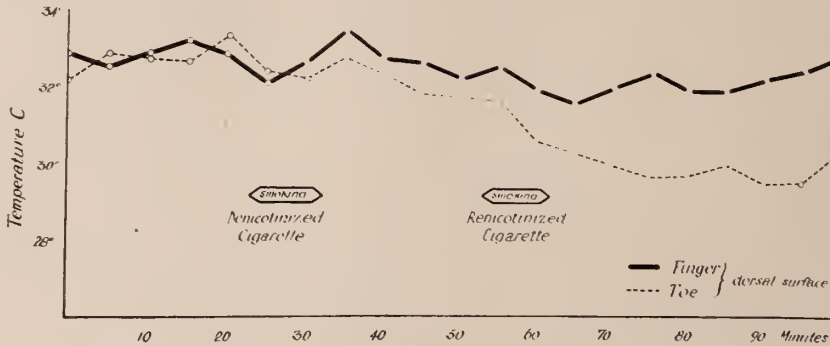


Fig. 2. Effect of smoking denicotinized and renicotinized cigarettes on the peripheral temperature of an habitual inhaling smoker. (7)

keeping with other observers, that on inhalation of cigarette smoke subjects under basal conditions showed a temporary rise in systolic blood pressure of from 10 to 25 mm. Hg, an increase in pulse rate of from 5 to 20 beats per minute, and a depression of the skin temperature of the fingers and toes of from 2° to 7° C. Figure 1 illustrates the typical responses of the peripheral temperature to cigarette smoking which he obtained in habitual, inhaling smokers. Non-inhaling smokers showed only slight changes at the most. Weatherby ascribed these effects largely to the nicotine present in the smoke. Proof of this was obtained from experiments in which his subjects smoked *completely* denicotinized cigarettes with consequent marked reductions in the phenomena listed above. He found, furthermore, that on restoration of the nicotine to these denicotinized cigarettes their smoke produced the same results as originally obtained before denicotinization (fig. 2). Similar results on blood pressure and pulse rate indicative of the role of nicotine in provoking these circulatory responses in man were obtained here by Main⁸ (fig. 3), and by us⁹ in experiments with cigarettes made with Burley tobacco naturally low (0.13 per cent) in nicotine. This series of results are in accord with those of most other observers. However, one pair of investigators¹⁰ offer evidence that nicotine is not the important agent in cigarette smoke so far as these effects on the circulatory system are concerned, and attribute these

role of nicotine in this connection is to be had from experiments which we have made on animals in which we have shown (fig. 4) that the intra-

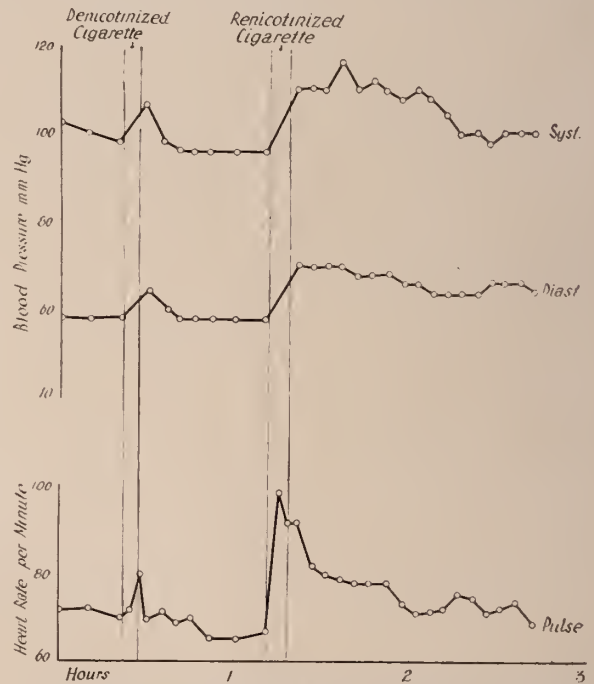


Fig. 3. Effect of smoking (exaggerated technic) denicotinized and renicotinized cigarettes on the blood pressure and pulse rate of an habitual inhaling smoker. (8)

venous injection of solutions made by dissolving cigarette smoke in water leads to an increase in blood pressure entirely related to the nicotine pres-

ent.¹¹ Interestingly enough, by this method it has been possible to differentiate between various popular brands of cigarettes, chemical analyses of which demonstrated differences in nicotine content.¹¹

Because of the clinical importance seemingly at-

further study in regards to other physiologic effects of smoking.

For some time now we have had in progress studies dealing with the effect of tobacco smoke on rats. In this experiment the animals are exposed, begin-

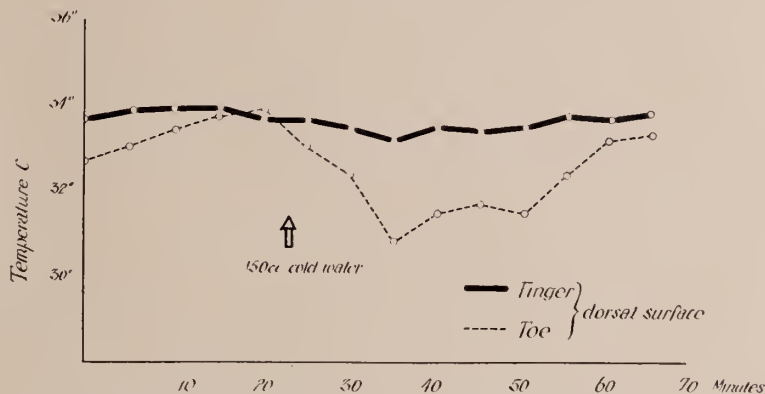


Fig. 4. Effect of drinking cold water on the peripheral temperature. (7)

tached to the effect of smoking on peripheral temperature it appears worthy of note that Weatherby⁹ found that various physiologic and psychic stimuli such as reading, talking, sudden noises, and the drinking of cold water evoked skin circulatory changes comparable to those produced by smoking (fig. 5). Somewhat similar findings were re-

ning at weaning age, to cigarette smoke daily under conditions closely simulating human smoking. As pertinent to the question of the permanent effect of cigarette smoke on blood pressure, it may be pointed out that these rats after eighteen months of treatment do not show blood pressure values different from those of the controls. These results are particularly

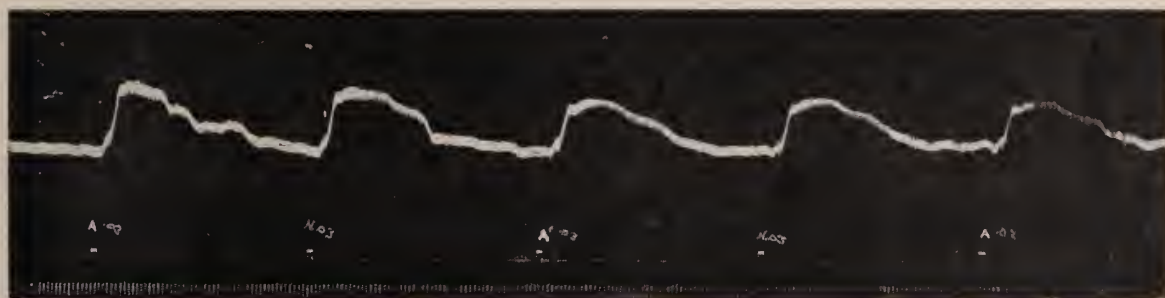


Fig. 5. Effect on blood pressure in a dog of the intravenous injection of nicotine acetate solution (0.1%) (N) and a cigarette smoke solution of the same nicotine content (A). Anesthesia, Dial: volume of solution injected, 0.03 cc. x Kg.; time, 6 seconds. (11)

ported as long ago as 1909 by Bruce, Miller and Hooker.¹² Even more significant, from a practical point of view, was Weatherby's observation that cigarette smoking had no appreciable effect on peripheral temperature while the subject was up and active. From this it appears that what smoking does to a subject in a basal condition is not necessarily a true reflection of what it does when the subject is up and about. This distinction is deserving of

striking when one considers that eighteen months represents one-half of the life span of a rat. However, while these rats show no chronic hypertensive effects from cigarette smoke, we have found that, in keeping with experiments on man, immediately after exposure to cigarette smoke, the blood pressure of these rats show some temporary elevation.

Fate of Nicotine in the Body.—We have studied this problem both in the case of the human smoker

and in dogs after injection of nicotine. In man, we have found,¹³ as have others,¹⁴ that approximately 10 per cent of the nicotine calculated as having been absorbed was eliminated in the urine, the quantity, however, being governed by the number of cigarettes smoked, whether or not inhalation was practiced, and finally by the pH of the urine. Theoretical and practical considerations^{15, 16, 17, 18, 19} would lead one to predict that less nicotine would be eliminated when the urine is maintained alkaline than when it is maintained acid. Actually, as seen from Table I, this expectation is fulfilled and only one-

since available information indicates that the pyridine molecule is not split in the animal body. With this in mind we have examined the possibility that the pyrrolidine component of the nicotine molecule might be completely split off or reduced to a one carbon side chain. However, analysis of the urine of dogs to which nicotine had been administered subcutaneously in divided doses totaling 3 mg. per Kg. failed to reveal any increase above the basal level in their urinary excretion of nicotinic acid, nicotinuric acid, trigonelline or 1-methyl pyridinium hydroxide.

TABLE I.

Subject	Cigarettes smoked daily	Amount nicotine retained from smoke (calculated)	pH of urine	Nicotine eliminated mg./24 hr.	Per cent urinary elimination of nicotine retained from smoke
1 (inhaler)	40	mgm. 115	5.5	12.7	13.04
			5.0	17.3	
				av. 15.0	
			7.1	2.1	
2 (inhaler)	18	52	7.6	3.2	2.30
				av. 2.65	
			5.6	5.37	
			5.7	6.27	
3 (non-inhaler)	40	14		av. 5.82	11.19
			7.1	2.09	
			7.2	1.30	
				av. 1.69	
			4.9	0.24	3.25
			5.2	3.00	
				av. 1.62	
					11.57

Effect of the hydrogen ion concentration of urine on the amount of nicotine eliminated by cigarette smokers. (13)

fourth as much nicotine was found in the urine when it was kept alkaline as when it was kept acid. We believe that this is due to resorption of the nicotine alkaloid by the mucous membrane of the urinary tract from an alkaline urine.¹³

The fate of the nicotine not eliminated in the urine is unknown. Some traces are probably present in all secretions. However, the bulk of the nicotine retained during smoking must be either stored, which is unlikely, or chemically altered in the body. In experiments on dogs we have found,²⁰ as in man,⁶ that only about 10 per cent of administered nicotine is excreted unchanged in the urine. We can only conclude that the remainder (about 90 per cent) is chemically altered in the body. The pyrrolidine component of the nicotine molecule would seemingly be the most likely site of chemical change

During the course of these experiments, we noted that there appears in the urine of dogs following administration of nicotine a compound that yields a red color when reacted with cyanogen bromide. This we have found is characteristic of nicotine derivatives in which the nitrogen of the group substituted in the *B* position of the pyridine molecule is unmethylated. Therefore, we have tentatively concluded that demethylation is a step in the detoxication of nicotine. However, this is not the only change that takes place. Simple demethylation of nicotine would yield nornicotine and we have shown that this substance is not present in urine following nicotine administration. Further work on this problem is in progress.

Regardless of the details of the mechanism by which the body rids itself of the absorbed nicotine,

available evidence indicates that this alkaloid is relatively quickly metabolized and eliminated. If this were not so it is hardly possible that one could smoke anywhere near the amount of tobacco one does without rather quickly developing major toxic phenomena. The exact rate with which man can detoxify and eliminate nicotine is not known; but rather definite information has been gathered on this point in our laboratory on rabbits. Weatherby²⁰ injected rabbits with fractions of the known fatal dose at regular intervals (Table 2), and found that their maximal

TABLE 2

Single dose, mg./kg.	Dose interval, min.	No. animals in group	Total Administered mg./kg.	Total eliminated mg./kg.	Rate of elimination mg./kg./min.
1	1	20	8.3	2.1	.253
1	1½	20	12.0	5.8	.322
1	2	20	19.3	13.1	.339
1	3	10	23.7	17.5	.246
1	4	10	27.0	20.8	.193
1	5	10	31.6	25.4	.161

Rate of nicotine elimination by the rabbit following intravenous injection of 1 mg. per Kg. at different time intervals. (21)

capacity for detoxification and elimination was 0.339 mg. per Kg. per minute. Man is, in all probability, more susceptible to nicotine than the rabbit, and hence, if for no other reason, transference of these results directly to man is not justified. However, when regarded purely speculatively, these rabbits detoxified an amount of nicotine, when calculated on a weight to weight basis, equivalent to that which would be retained by man on inhalation of the smoke from eight cigarettes per minute.

The site of nicotine destruction in the body has been investigated by several experimenters.^{22, 23} The consensus of these studies seems to be that the liver is the most important organ in the detoxification of nicotine. In at least partial substantiation of this we have found that mice in which liver damage had been produced by carbon tetrachloride tolerated repeated nicotine administrations poorly as compared to normal controls.

In conclusion, may we point out that in spite of the voluminous literature bearing on the physiological effects of tobacco smoke, the answers to many important questions still remain moot. This state of affairs obviously indicates the need for more extensive, more scientific, studies. We hope that we will be given the privilege of sharing in these and

that from time to time you will allow us again to bring before you later reviews on the pharmacology of tobacco smoke and its constituents.

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DISCUSSION

DR. DOUGLAS G. CHAPMAN, Department of Medicine, M. C. V.: Dr. Haag and Dr. Larson have added much to our scientific knowledge of tobacco smoking. The opinions expressed about smoking are great in variability and low in reliability. The conflicting ideas are probably due to the individual's response to nicotine which varies from day to day.

Scientific facts obtained from human and animal experiments could only hope to be approximately correct. The effects of smoking are complex, our true knowledge is so slight and our opinions so divided that one's judgment may be more personal than scientific. First, some known facts: There is local irritation to the mouth, tongue, pharynx, larynx, and bronchi, and, if saliva is swallowed, the esophagus and stomach may also suffer. Cancer of the mouth, tongue, esophagus, larynx, and lungs is more common in smokers. Although smoking has increased in both sexes the percentage of cancer of these organs is decidedly greater among males. This fact is also true in countries where women have always smoked.

Respiratory System: Chronic cough and pharyngitis, with expectoration of thick mucus, is a common complaint in smokers. In Army discharges for tuberculosis, the smokers and non-smokers share alike.

Gastro-Intestinal Effect: Indigestion is our number one complaint in medicine. Tobacco, so far as I know, has never been prescribed as a cure for this complaint. It may decrease the appetite and inhibit hunger pains. It is credited with simulating most of the gastro-intestinal disorders. Women, again with an increase in smoking, have shown no increase in the prevalence of ulcer.

Secretion of Milk: Most reports show a slight to

marked decrease in lactation and one report showed traces of nicotine in the milk after seven cigarettes were smoked in two hours. In several experiments no nicotine was found in the milk. In some countries where women have smoked since girlhood for generations there was no decrease in lactation and they raised and nursed large families.

Unborn Child: Some report an increase in fetal heart rate, while others report a slowing.

Reproductive System: It has been said that smoking tended to produce abortions but in harems where women spent most of their time smoking there were no abortions.

Growth: It is believed by some that tobacco may retard growth. Mice given large doses of nicotine over a long period of time outgrew the controls. More young people are smoking now than ever before—however, among the smokers and non-smokers their heights and weights are increased.

Blood Sugar is elevated with tobacco poisoning and in most heavy smokers. This is said by some to account for the pleasure of smoking. However, the smoker will not substitute a lump of sugar for a cigarette and he will tell you that his best smoke is after a meal and not on an empty stomach.

Allergy and Tobacco: The entire composition which enters into the manufacture of tobacco may play a role in allergy.

Physical Efficiency: John Adams, second President of the United States, after using tobacco for sixty years, complained that he found himself sickened by smoking only one-quarter of the amount of tobacco to which he had been accustomed. Mark Twain was asked in his latter years if he smoked. He said, "I do not smoke when I am eating and sleeping". In ordinary activities and a reasonable amount of smoking there may be no effect. It is likewise true that the highest muscular efficiency, endurance, skill, and ability to meet physical strain are incompatible with smoking.

Fatigue: Fatigue is marked in some individuals after smoking, and this varies from time to time in the same individual. I have frequently measured it in patients by having them climb twelve steps. They are generally below par and most of the weakness is manifest in the flexor muscles of the thigh. It is said smoking tires you when you are rested and rests you when you are tired.

Accumulated Effect: Tobacco headache is a good example of tolerance and intolerance in smoking. I believe this symptom, with those of fatigue and the circulatory system, offers the best method of investigating the cumulative effect of tobacco and accounts for the variations in symptoms.

Pain is increased by smoking in certain diseases, such as Buerger's disease, intermittent claudication, and in various forms of rheumatism, myositis, and fibrositis.

Circulation: Breathlessness on slight exertion, palpitation, substernal distress, premature beats, precordial pain, changes in the T, QRS and P waves of the electrocardiogram are frequent findings in heavy smokers. Reports show that auricular fibrillation, auricular flutter, sino-

auricular heart block, auriculoventricular heart block are also occasionally precipitated by smoking. After coronary infarction by ligation, smoking markedly alters the electrocardiogram in the acute stage and the heart's tolerance to nicotine is one-fourth that of normal. There is less alteration in the sub-acute stage and still less in the chronic stage.

In one review of 15,000 smokers and non-smokers, there were ten per cent more than the average with organic heart disease.

We frequently hear: "Your legs or your cigarette", so one must decide for himself whether the pains or the pleasures of smoking are worth while.

Different parts of the same individual differ on sensitivity as individuals differ from each other. Each individual may change his state and condition from day to day and his reaction will vary accordingly. Nicotine is at first a stimulant to the sympathetic nervous system, then a depressant, and the state of the individual's nervous system may be the deciding factor in his or her reaction to smoking.

LT. COMMANDER EMIL BOGEN, M.C., U.S.N.R.: The pressor effect of nicotine, evidenced by rise in blood pressure, lowering in peripheral temperature, and visible changes in skin color, etc., is one of the most remarkable and consistent effects of this drug, and is of considerable pharmacological and clinical importance. The fact that such changes may be produced by other mechanisms, reflex or direct, or that they may be absent in other conditions, such as activity, should not be permitted to obscure this clearcut general phenomenon. The experiments reported by Haag and Larson show that the lowering in the temperature of the toe results from the nicotine in tobacco smoke, more than from all other factors combined. The relative effect of physical and chemical factors in

the slight effects noted with their denicotinized cigarettes might incite further inquiry.

The studies of absorption and excretion of nicotine are interesting, but the results are not yet sufficiently extensive or convincing to resolve remaining doubts, or to explain just what does happen to the nicotine in the smoke. That some is absorbed and excreted unchanged seems evident, but just what happens to the remainder, though partially illuminated by this work, still requires further investigation.

The effect of nicotine on the peripheral circulation is important, but is not the only effect of this drug which may be of clinical importance, and so similar studies on the other manifestations of its action, similar to those here reported, are to be desired. Moreover, there are many effects of smoking which do not seem to be ascribable to the nicotine in the tobacco, and it is to be hoped that Dr. Haag and Dr. Larson will continue their studies and help to clarify them. The preparation of cigarettes *completely* denicotinized allows investigation of such effects which could not be made with the alleged denicotinized cigarettes on the market. It is to be hoped that such completely denicotinized cigarettes might also be made commercially available, so that physicians who have patients in whom nicotine is contraindicated, as in Buerger's disease, might make clinical trial of such products.

DR. HAAG, closing the discussion: In closing, I should like to thank Dr. Chapman for his excellent discussion and also to thank Dr. Bogen for his.

Dr. Chapman and Dr. Bogen have raised so many interesting and important points that I think it would require a great deal more time than is available this morning for us to go into these. I hope, however, that this will be possible at some early future date.

Thank you very much.

Physical Therapy Personnel Needed.

Realizing the acute need for physical therapy personnel, partly resulting from the war, The National Foundation for Infantile Paralysis has just made a two-year grant totaling \$34,080 to the Stanford University School of Health (Women) at Stanford University, California.

This grant, which is in addition to other funds

given by the National Foundation to this University, is for the two-fold purpose of strengthening the physical therapy technicians' school and of preparing syllabi and text materials for the use of physical therapy instructors and their students.

Under this program selected students will be provided specialized training designed to prepare them to become skilled teachers of physical therapy.

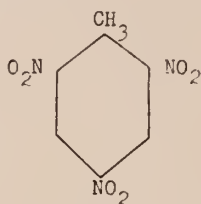
TOXICITY OF TRI-NITROTOLUENE*

ALEXANDER McCausland, M.D.,†
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and
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Radford, Virginia.

The toxicity of tri-nitrotoluene is somewhat better understood in World War II. This article is simply intended to present a review of the medical literature on the subject together with such information as has accumulated during the past two years in observing this type of industrial exposure. The section on pathology is taken entirely from the literature as there have been no fatal cases in the experience of the authors.

Chemistry of Manufacturing Process

Toluene



Tri-Nitrotoluene

T.N.T. is a pale, yellow, crystalline powder produced by completely nitrating Toluene with a mixed acid (sulphuric and nitric acid).

INCIDENCE OF T.N.T. POISONING IN
WORLD WAR I

In England alone during 1916 there were 181 cases of T.N.T. jaundice; of these 52 deaths occurred.¹ In 1917 England reported 189 cases of T.N.T. jaundice, with 44 deaths. In Bavaria during the period of 1917 to 1918 there were 1,000 cases of toxic T.N.T. jaundice with 113 deaths. In the United States 7,000 cases of T.N.T. jaundice with 105 deaths were reported during a period covering 20 months. During the first 7½ months of 1917 the incidence of T.N.T. jaundice reached its peak with 17,000 cases of T.N.T. jaundice and 475 deaths.² During the last half of 1917 the incidence of T.N.T. poisoning decreased rapidly, although many workers were engaged in the manufacture of T.N.T. This sharp decline in the inci-

dence of T.N.T. poisoning during the late months of the first world war was undoubtedly due to a better understanding of the toxicity, prevention, diagnosis and treatment of T.N.T. poisoning. These figures serve not only to prove that T.N.T. may be an etiological agent of a serious illness with a high mortality rate, but also that the morbidity and mortality can be significantly reduced by a better understanding of its toxicity, by proper preventive measures, and by early diagnosis and proper treatment in those cases of T.N.T. poisoning that occur in spite of our best preventive efforts.

CHANNELS OF ABSORPTION

1. Skin Absorption

The skin is the chief channel of entrance of T.N.T. into the body.³ Skin absorption is increased in the presence of oily skin, sweaty hands in hot weather.³ The area of exposed skin surface is reduced by the use of specially designed protective uniforms. These uniforms leave exposed only the hands, face, neck, and possibly the ankles. Gloves can further reduce the area of skin exposure if properly used. If T.N.T. is allowed to get inside of the gloves, the exposure of the skin of the hands is intensified, especially in warm weather when gloves cause increased sweating of the hands.

Skin varnishes have been used as a protective coating with the hope of preventing skin absorption, but have met with little success.² Skin cleanliness is the most effective means of reducing skin absorption. Skin absorption of T.N.T. is said³ to be significantly less in women workers than men. This is explained³ by the comparatively higher standard of cleanliness among women. A thorough shower and a change from work uniform to clean clothes at the end of the work shift will prevent further absorption, by removing the T.N.T. from the skin. It is to be pointed out, however, that a soap and water shower alone will not remove all of the T.N.T. from the skin. It has been shown that as much as a half of a gram of T.N.T. can be extracted from the 10 per cent sodium sulphite solution used on a

*Read before the Roanoke Academy of Medicine in May, 1942.

†Medical Director, Radford Ordnance Works, Radford, Va.

worker's hands as an after rinse following thorough soap and water scrubbing.³ Sodium sulphite is one of the best solvents for T.N.T. and in a 10 per cent solution is harmless to the skin. Sodium sulphite solution turns red when it reacts with the T.N.T. on the skin and this color change impresses the worker as to its effectiveness, further qualifying the solution as an ideal after wash.

2. Alimentary Tract

The alimentary tract is also an important route of entry of T.N.T. into the body. The compound is quite soluble in saliva and gastric juices.³ Smoking is not compatible with T.N.T. handling because of the fire hazard; therefore, chewing of tobacco becomes a habit with most workers. The T.N.T.

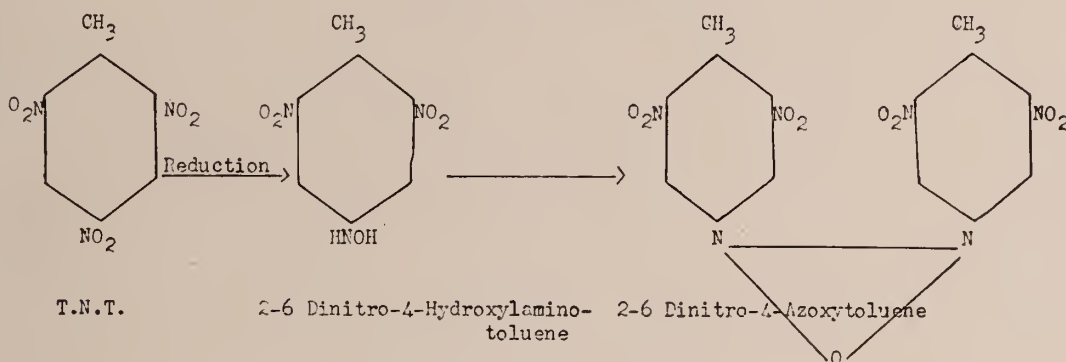
the body is the respiratory route. T.N.T. enters the body by way of the air passage in two forms, dust and vapor.

It has been estimated that a worker engaged in melting T.N.T. may absorb 16 milligrams of the material in an 8 hour shift by breathing its vapor.³ It has been further estimated that a worker engaged in sweeping T.N.T. off of the floor may absorb as much as 9 milligrams through the air passage in a single 8 hour shift.³

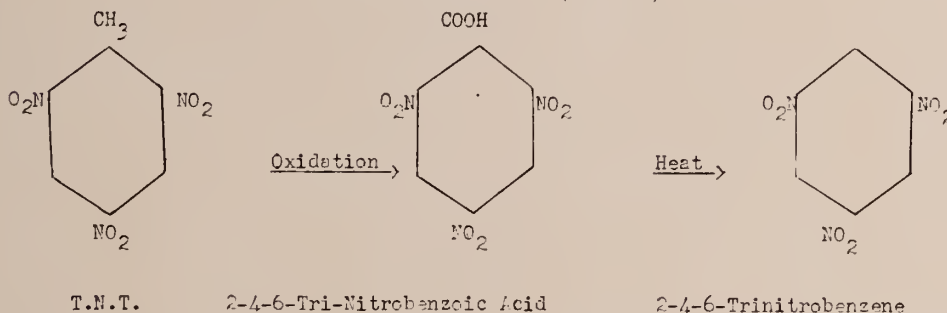
FATE OF T.N.T. IN THE BODY

T.N.T. is said to undergo both reduction and oxidation within the human body.⁴ The fate of T.N.T. in the body varies with different individual workers.

REDUCTION THEORY:⁴ (Webster)



OXIDATION THEORY:⁴ (Watson)



laden hand of the worker placed into the tobacco package can start T.N.T. on its way into the intestinal tract. Likewise, the failure of the worker to wash his hands before eating his lunch leads to alimentary absorption of T.N.T.

T.N.T. poisoning has been produced experimentally by the gastro-intestinal route, in animals, by feeding the animal milk saturated with powdered T.N.T.⁸

3. Respiratory Tract

A less important route by which T.N.T. enters

The Webster test,³ which is a qualitative color test for detecting T.N.T., is based on the fact that a solution of T.N.T. assumes a purple-red color when an alcoholic solution of potassium hydroxide is added. This test is negative when applied to the fresh urine of a T.N.T. worker, whom we know has absorbed large amounts of T.N.T.³ However, if one modifies the Webster test by first acidifying the urine before the ether extraction, the extract so obtained gives the purplish-red color upon addition

of the alcoholic solution of potassium hydroxide. It has been suggested³ that some derivative of T.N.T. giving the same color test as T.N.T. is being excreted in the urine of the T.N.T. worker. The only derivative of T.N.T. giving the same color test is the hydroxylaminotoluene derivative. Thus it has been suggested³ that a part of the absorbed T.N.T. is broken down in the body into a hydroxylaminotoluene derivative which is excreted in urine.

It is suggested³ that part of the T.N.T. is oxidized to trinitrobenzoic. Trinitrobenzoic is much less toxic than T.N.T. or its reduction product dinitrohydroxylaminotoluene.³ This difference of toxicity has been explained³ by the fact that trinitrobenzoic acid is extremely water soluble and is therefore rapidly removable from the body through the kidneys, whereas, T.N.T. and its hydroxylaminotoluene reduction product are poorly soluble in water, and are therefore eliminated from the body in the urine with difficulty.

The T.N.T. and its reduction products retained in the body tissues are mobilized by the ingestion of alcohol.⁹ T.N.T. workers frequently volunteer the information that even a small drink of whiskey or beer will cause them to feel warm all over, experience a tightness in the chest and a feeling of fullness, in the head, far beyond that normally experienced from the amount of alcohol taken. Many stories are told of T.N.T. workers passing out on barroom floors after the ingestion of only a small amount of alcohol.⁹

It has been suggested³ that the difference in resistance shown by different workers to T.N.T. may be explained on the basis that the more resistant workers oxidize the methyl group of T.N.T. more readily, thus forming trinitrobenzoic acid which is rapidly excreted from the body through the kidneys, whereas the more susceptible workers reduce the T.N.T. to its hydroxylaminotoluene derivative which is eliminated from the body with much difficulty.

PATHOLOGY

The toxic action of T.N.T. is clearly shown at autopsy in the liver and the bone marrow. The most serious effect is the acute yellow atrophy of the liver.⁸ In a patient dying from hepatitis following exposure to trinitrotoluene one may find the following:

1. Liver

Gross histological pictures are characteristic of

the classical acute yellow atrophy.⁸

2. Spleen

The spleen is of normal or slightly increased size and shows some softening. Some observers consider moderate enlargement characteristic.⁸ Microscopically, the blood sinuses are somewhat enlarged and contain large endothelial phagocytes filled with erythrocytes and hemosiderin.⁸

3. Kidney

Gross examination shows much bile staining and changes characteristic of acute toxic nephritis.⁸

4. Lungs

Grossly, the lungs are normal except for bile staining. A few instances of hemorrhagic infarction of the lungs have been reported.⁸

5. Adrenals

The tissue stroma shows changes similar to those described for the other reticulo-endothelial organs. Small areas of medullary cells are occasionally replaced by erythrocytes.

6. Bone Marrow

The bone marrow findings at autopsy have no one consistent pattern. The marrow varies in color from a pale pink with grayish areas to dark red. The red hyperplastic type of marrow is more frequently found. Turnbull's³ microscopic examinations indicate a relative excess of erythroblastic activity and a decrease in the number of megalokaryocytes; numerous plasma cells and large phagocytes containing pyknotic nuclei, erythroblasts, erythrocytes and iron-containing pigment.

In the later stages of poisoning the aplastic picture may predominate with few or no myelocytes or nucleated red cells.⁸

7. Lymph Nodes

These contain numerous large mononuclear phagocytes loaded with granular hemosiderin.

8. Other Organs

Petechial hemorrhages of the pericardium, pleura and stomach mucosa have been reported.⁸ The brain and other body tissues reveal little pathology aside from generalized icteric staining.

MANIFESTATIONS OF ANOXEMIA

Inasmuch as T.N.T. is fat soluble it is absorbed by the erythrocytes and acts to change the oxyhemoglobin into a mixture of methemoglobin and nitric oxide hemoglobin.⁹ Neither methemoglobin nor

nitric oxide hemoglobin can act as a satisfactory carrier of oxygen and thus an oxygen deficiency results. This oxygen deficiency gives rise to numerous manifestations in the worker.

Cyanosis typically appears on the lips, fingernails, tongue, and mucous membranes of the affected worker. This cyanosis is characterized by a "greyish mauve" shade and may therefore be differentiated from the cyanosis of cardiac or lung disease.⁶ Artificial oxygen inhalation has little effect on the cyanosis but does benefit the patient by slowing the pulse and decreasing the respiratory rate.

Dyspnea on exertion occurs as a manifestation of anoxemia.

Many T.N.T. workers complain of dizziness, especially when bending over. This dizziness has been explained⁶ as due to temporary functional abnormality of the cerebellar centers incident to the cerebellar anoxemia.

A complaint of the T.N.T. workers is muscle cramps. This symptom is often hard to evaluate in workers doing heavy manual labor, but in cases where the muscle cramps are due to T.N.T. poisoning the explanation is probably based on an anoxemia of the muscles. This anoxemia is proportional to the amount of muscle exertion.

Headache is a frequent complaint and probably has its explanation in anoxemia of the brain.

T.N.T. FACIES

The T.N.T. facies is characterized by a pallor comparable to that of shock with a grey-blue or slate like coloration of the lips, and of the lobes and helix of the ears.⁶ The sites mentioned are selective. In the typical T.N.T. facies, it has been reported⁶ that coloration is brighter than that seen in cyanosis of other types. The lips are a "lilac shade" in true T.N.T. facies, as compared to "ashen grey" lips of cyanosis of heart failure, pneumonia, or others. The color of the lips in T.N.T. intoxication is so unreal as to convey the impression, in women, that the wrong shade of lipstick has been used. The color is greatly modified by excitement or exercise on the part of the worker, such as rushing to get to work on time.⁶ Artificial light also changes, surprisingly, the color of the T.N.T. facies. Under a mellow yellow light the color disappears and reappears when the worker steps into daylight.⁶ A theory proposed by Roberts⁶ contends that T.N.T. stimulates the vasoconstrictor center, causing a local

capillary stasis and thus an increased venosity of the blood in that area. This theory seems to be a logical explanation of the color of the lips and ears since the characteristic appearance is known to occur without other signs or symptoms of anoxemia, such as fatigue, and breathlessness. Furthermore, such facies may exist when the blood count is normal. In view of these observations it seems we should recognize the T.N.T. facies as a characteristic and distinct manifestation of T.N.T. poisoning.

GASTRO-INTESTINAL MANIFESTATIONS

An unpleasant taste is an almost constant complaint of workers during the period of contact with trinitrotoluene.

Epigastric pains often seem to be just hunger pains resulting from stimulation of the appetite by T.N.T. Other instances are undoubtedly due to a T.N.T. toxic gastritis.⁴ In some cases it is possible that already existing functional abdominal complaints are aggravated by T.N.T. Abdominal complaints are less frequent in men who come to work with a full stomach.

Nausea and vomiting may be due to a toxic gastritis resulting from the ingestion of T.N.T.⁴ The only physical finding may be muscular tenderness resulting from the effort of vomiting. Vomiting may become so severe that intravenous salt replacement is needed.

SKIN MANIFESTATIONS

A characteristic yellow-orange staining may be found on the palms of the hands and soles of the feet of exposed men. This is not necessarily accompanied by signs of intoxication.

The small sharp crystals of T.N.T. may, by mechanical trauma, produce a dermatitis on those exposed areas of skin with which it comes in contact. Friction from the clothing aids in producing the irritation.

Another type of skin reaction appears to be true sensitization dermatitis. The patch test is helpful in making the diagnosis in such instances. One method of testing is to apply a 5 per cent alcoholic solution of T.N.T. to the skin and examine at 24, 36 and 48 hour intervals after application. Many workers never develop a T.N.T. dermatitis even though they are exposed for years. Some workers will develop a mild dermatitis early in their work which disappears subsequently even with continued exposure. Those who fall in this group seemingly

acquire an immunity or become desensitized from the first attack. Therefore, it is not necessary to remove a worker from the exposure on the basis of early, mild dermatitis. Other workers stand the exposure for months without a dermatitis and then suddenly develop the dermatitis. It would seem that these workers acquire a sensitivity or susceptibility from the exposure which they did not possess at the time they began the exposure.

We have no certain way of predicting just which worker will show susceptibility to T.N.T. in the form of a dermatitis, neither do we know which worker will be immune or develop immunity after a single attack. So beyond elimination of those candidates for exposure who give a definite history of frequent skin trouble, one proceeds largely by trial and error.

T.N.T. JAUNDICE

In experience reported³ from World War I it has been estimated that 0.2 per cent of all workers exposed to T.N.T. developed toxic jaundice and that there was a 30 per cent mortality in this group. T.N.T. jaundice is usually, not always, a late sign of T.N.T. poisoning, but it is indeed a severe sign. Most workers who develop jaundice do so during the first six months of contact with T.N.T.

Every case of jaundice does not mean that actual parenchymatous liver damage is present.⁵ Jaundice occurring in the absence of actual liver damage has been explained³ on the basis of a phagocytic anemia with the deposition of hemosiderin and bilirubin throughout the body, because of the inability of the liver to excrete the pigment as fast as it is liberated from the erythrocytes.

It has been suggested³ too that the icterus may in some cases be due to an increased viscosity of the bile leading to obstruction of the smaller bile ducts, without definite liver damage.

In other cases the icterus is due to extensive necrosis and atrophy of the liver, characterized as acute yellow atrophy. In jaundice due to liver damage, it is believed³ that certain pre-existing pathological conditions affecting the functional capacity of the liver (alcoholism, cirrhosis, syphilis) may predispose the worker to a toxic jaundice. In the presence of this co-existing pathology it is possible that the action of T.N.T., or its reduction products, may result in greater damage to the liver cells than occurs in a person with a normal liver, or that such

a person will have a smaller reserve of good liver tissue to risk against further hepatotoxic chemicals. This is a foundation for eliminating candidates for this exposure, who at the time of employment give a history of chronic alcoholism, syphilis, jaundice or liver disease.

Although T.N.T. jaundice usually follows or is associated with less serious symptoms, such as nausea, vomiting, cyanosis, etc., it may occur suddenly and in complete absence of any other signs of poisoning. The icterus in early stages is a characteristic lemon yellow color, rather than the greenish brown color of obstruction jaundice.

It is important that all physicians, the specialist and practitioner alike, in the neighborhood of T.N.T. plants, acquaint themselves with the manifestations that T.N.T. may cause. Inquiry into the patient's working conditions often gives a clue to the diagnosis. Correct early diagnosis is important if the affected worker is to have the best chance for recovery.

BLOOD CHANGES IN T.N.T. POISONING

Blood taken by venopuncture from a patient with severe T.N.T. poisoning is dark bluish red in color and has an increased viscosity. These changes in the gross appearance of the blood are thought to be due to a mixture of methemoglobin and nitric oxide hemoglobin.⁷

In patients with T.N.T. poisoning the erythrocytes may be small and fragmented. All workers who show marked changes in the blood have definite symptoms.⁷ While one cannot rely on the character of the erythrocytes alone to indicate the degree of poisoning, it is possible to get a rough index as to the degree of poisoning in some instances from the hematologic examination.⁷

The anemia of early T.N.T. poisoning has been thought to be due to an increased rate of destruction of erythrocytes and not due to the toxic action of T.N.T. on the bone marrow.⁷ T.N.T. is assumed to be absorbed by the cells and to change part of the oxyhemoglobin into a mixture of methemoglobin and nitric oxide hemoglobin. Disintegration of the erythrocyte follows. The red blood cell fragments are engulfed by endothelial phagocytes of the spleen, bone marrow, lymph glands and Kupffer cells of the liver where the hemoglobin is broken down into bile pigment and hemosiderin.³ Although there is destruction of erythrocytes, no anemia

results so long as regeneration compensates for the destruction.⁷ When destruction exceeds regeneration, anemia results.

Aplastic anemia is a late and rare complication of T.N.T. poisoning. In the latter stages of the anemia of a neglected worker the function of the bone marrow may be seriously depressed⁷ due to an oxygen deficiency or other metabolic abnormality.

The aplastic anemia is almost always fatal and occurs in those workers who have been subjected to constant exposure, even in the face of anemia. Weekly blood examinations will detect the early pre-aplastic stages and thus prevent the anemia from progressing to the aplastic stage. Aplastic anemia may or may not be preceded by jaundice.⁷

In the early stages of T.N.T. poisoning there is often a polynuclear leukocytosis.⁷ This leukocytosis is presumably due to stimulation of the haemopoietic system by T.N.T.⁷ This initial leukocytosis is followed by a decrease in the leukocytes with an absolute increase in lymphocytes. Still later a leukopenia may develop with a diminished polymorphonuclear leukocyte count and a relative increase in lymphocytes. With aplasia of the bone marrow in severe T.N.T. poisoning, there is decreased output of polynuclear cells from the bone marrow, but at the same time the lymphocyte forming tissue may be unaffected.⁸

Eosinophilia in the absence of other cause can be looked upon as due to the effect of T.N.T.⁷ Eosinophilia suggests good rather than poor marrow activity. Eosinophils are sometimes increased in T.N.T. dermatitis. The precise cause of the eosinophilia is unknown, but may be an indication of an allergy to the chemical.

TREATMENT OF T.N.T. JAUNDICE

It is advisable that all cases of T.N.T. jaundice, even the very mild, be sent to the hospital as soon as they are detected. Hospital facilities are necessary for the indicated strict observation and vigorous treatment which may be needed. As soon as practicable after admission to the hospital the patient should have a thorough bath with warm soap and water, followed with an adequate after rinse of 10 per cent sodium sulphate, to remove any T.N.T. remaining on the skin. The patient should receive at least 20 grams of intravenous glucose daily.⁵ The glucose serves to fortify and protect the liver, and since the liver may already be injured due to the

toxicity of T.N.T., the protective value of glucose is an essential consideration. The diet from the beginning, in the absence of nausea and vomiting, and as soon as tolerated in such cases as are associated with nausea and vomiting, should be one high in carbohydrate and low in fat. The high carbohydrate content of the diet serves to fortify the liver.

The rational of ascorbic acid therapy is supported by animal experiments⁴ which demonstrates that carnivorous animals are highly susceptible to T.N.T., whereas herbivorous animals are highly resistant to T.N.T. Carnivorous animals derive very small amounts of vitamin C from their diet, whereas herbivorous animals derive comparatively large amounts of vitamin C from their diet.

It would seem there is logical basis for the use of vitamin C therapy, both as a preventive and in the actual treatment of T.N.T. poisoning. In any event it can do no harm, since surplus vitamin C is excreted without evidence of harmful effects.

It has not been demonstrated that workers receiving excess vitamin C intake are less susceptible to the toxic action of T.N.T., than are workers receiving a normal intake of that and other vitamins. The worker with T.N.T. poisoning that has progressed to the stage of jaundice is likely to have a vitamin C deficiency due to the associated loss of appetite, nausea and vomiting; therefore, it is our feeling that vitamin C is of indicative value in the actual treatment of these cases.

Vitamin C, when given preventively, should not be given with the idea that it is a specific preventive, but rather for the purpose of supplementing the vitamin C content of the diet of the worker, thus taking care of any vitamin C deficiency that may exist in the diet of the worker. Controlled studies are needed to answer this question.

Liver extract in adequate dosage is advisable in jaundiced patients who show even the slightest anemia. Some patients may have an aplastic blood picture, yet the bone marrow be hyperplastic.⁵ It has been suggested⁵ that the aplastic anemia is due to the inability of the damaged liver to supply some factor essential to hemopoiesis. Furthermore, treatment of the anemia with iron alone will result, in many cases, in an adequate hemoglobin response, but a poor or delayed erythrocyte response.

Such drugs as the sulfonamides, chloral hydrate and amidopyrine should not be given to the patient

with T.N.T. jaundice. These drugs are capable of causing damage to the liver and bone marrow and may increase the damage to these organs caused by T.N.T.

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Pharmacy and Medicine Working Together.

Harvey B. Hagg, M.D., head of the Department of Pharmacology, Medical College of Virginia, says that one of the most difficult problems in the teaching of medical students is that of prescription writing. Perhaps no single facet of medical instruction is so frequently the butt of adverse criticism, not only from physicians themselves but from those responsible for compounding prescriptions, namely, pharmacists. Those who teach pharmacology to medical students are well aware of this situation, and many have been the methods used in attempting a solution. In this connection it may be of interest to outline briefly a plan which is being tried at the Medical College of Virginia.

A prescription is a message from a physician to a pharmacist, and so the better these two understand one another the more smoothly will this message be interpreted and executed. With this in mind the school of pharmacy here at the college was asked

some several years ago to aid in the teaching of prescription writing to our medical students. This cooperation was gladly given. At present during the regular pharmacology course eight lectures are given by Dr. T. D. Rowe and Dr. Karl Kaufman, in which the more common pitfalls and errors of prescription writing, as the pharmacist sees them, are brought to the attention of the medical students. In addition, other problems of mutual concern, such as, for instance, the intricacies of the narcotic laws, are discussed. While this program has now been in progress too short a time for final evaluation, it is already evident that this addition to the teaching of medical pharmacology is bearing fruit, and it is planned to continue this cooperative scheme on a more elaborate scale in the coming years. Fundamentally this would seem to be a sensible and logical procedure and for us here at the college, because of our unique organization, an especially feasible plan. (*The Virginia Pharmacist*, 28: 1944, 38.)

REPORTS AND OBSERVATION ON SOME THREE HUNDRED CASES OF WHOOPING COUGH*

WILLIAM B. McILWAINE, M.D.,

and

LETA J. WHITE, M.D.,

Petersburg, Virginia.

It has been quite a few years since Petersburg had even a mild epidemic of whooping cough, and so we welcomed the opportunity to try, in a rather feeble sort of way, to evaluate the virtues of the modern methods of the prevention and treatment of this disease.

As you well know, pertussis ranks as one of the great causes of infant and childhood mortality. Although the medical profession still, in a large majority of cases, takes the attitude of "laissez faire", some even going so far as to say that the disease has to run its course and there is no necessity for bothering about prevention and treatment in whooping cough, the morbidity and mortality rates do not bear out this indifferent attitude as is shown by the fact that there were 2,405 cases reported to The State Health Department in 1942 with a mortality of 5 per cent, and so far in 1943 there have been 799 cases reported with a mortality rate of about 10 per cent.

Dr. White and I have diagnosed and treated 250 to 300 cases of whooping cough this year (1943). The statistical data of 200, on which records were kept, are as follows:

Males	80
Females	120
White	180
Colored	20
Mild	106
Moderately severe	60
Severe	34
Under 1 year of age	30
1-2 years of age	11
2-4 years of age	24
Over 4 years of age	135
Preventive inoculations	11
No prophylactic treatment	189

Of these 11 cases—

- 1 severe
- 3 moderately severe
- 7 mild

COMPLICATIONS

Only 14 cases had complications

Only 2 deaths

One death was an infant three months old with severe whooping cough and was seen only when in extremis. The other, five months old, was cared for very poorly, had pneumonia at onset, from which it recovered, but the whooping cough became worse and the baby died.

TREATMENT

Our treatment of these cases during this epidemic consisted of—

1. Ascorbic acid
2. Elixir of gold chloride (Elixir BroMuriate)
3. Vaccines (antigens and nasal treatment with pertussis topogen)
4. Diatussin
5. Pertussin and the expectorant cough syrups
6. Sedatives, as indicated
7. Sulfa drugs.

Dr. White thinks very highly of ascorbic acid in large doses. I prefer vaccines. Both use elixir of gold chloride but I am partial to Diatussin. We both used sulfadiazine in cases of pneumonia and bronchitis complicating the disease, and some uncomplicated cases seemed to respond nicely to sulfathiazole.

The mortality was only 1 per cent, both deaths in infants of a few months, under poor environmental conditions.

As only 11 children had the disease who had previously been immunized; and as we cannot report on the number of cases who were exposed to the disease after having been immunized, we can only suggest from this study that the prophylactic treatment is of benefit. I think it is fair to say, however, that both Dr. White and I immunize our babies routinely and both have immunized many hundreds since its recommendation by the health authorities and the American Academy of Pediatrics.

As only 11 cases, or about 5 per cent of this study, had received the prophylactic treatment, we think it follows that the measure is of value and should be continued and extended.

*Read before the annual meeting of the Medical Society of Virginia, at Roanoke, October 25-27, 1943.

In conclusion, may I state that in my opinion, while we have no specific treatment that is of value in every case of whooping cough, each case still should be treated symptomatically and at times vigorously, as we have outlined above, or as it seems indicated to the individual physician. Many cases of severe whooping cough can be greatly aided and complications avoided if the physician sees the case at regular intervals, outlines measures for its control, and prescribes remedies for its varying symptoms, thus bringing to a happy conclusion a disease which could easily be fatal by neglect and indifference.

DISCUSSION

DR. J. B. STONE, Richmond: Dr. McIlwaine's paper, I think, has very properly emphasized three important facts regarding whooping cough. The first is the seriousness of this disease in infants and small children; the second, the effectiveness of immunization; and, third, the relative inadequacy of the treatment often given, or of the agents available for treatment.

In regard to its seriousness, whooping cough is a disease so widespread that the lay public, and many doctors, are inclined to look upon it as a trivial disease. As Dr. McIlwaine has pointed out, it is not a minor disease. The mortality in infants under one year of age is twenty-five per cent; during the second year, it is ten per cent; for all ages, over two per cent. With such a high mortality, it cannot be looked upon as a trivial disorder.

With regard to the efficiency of treatment Dr. McIlwaine's figures, I think, are significant. In other series of cases, on a larger scale, other investigators have given similar results. For instance, in a report by Silverthorne of 747 cases immunized, there was an incidence of only 2.2 per cent, whereas in a control series with somewhat comparable numbers the incidence was 85 per cent. In another series, reported by Eldering and Kendrick, of 1,851 cases immunized there was an incidence of 2.8 per cent, whereas in the control series there was an incidence of 80.2 per cent. It is the experience of other workers that proper immunization with fresh, properly prepared vaccine is very effective in lowering the incidence of pertussis. It must be kept in mind, too, that to be effective the vaccine must be administered before the child is exposed to whooping cough. A period of at least three

months following inoculation is necessary for full immunization to occur. Many people think it not effective because a child exposed to whooping cough a month or six weeks after inoculation develops the disease. If the vaccine is administered to young children and infants before an epidemic occurs it gives time for immunization to become effective.

If immunization is done at seven months of age it is much more effective than when the vaccine is administered at three months. Yet it is in the earlier ages that the mortality is so great. So we are between the devil and the deep blue sea. It is my own practice to give the immunization at five or six months of age and then give a stimulating dose later. There is a tendency for the immunity to decline over a period of time, and by giving a stimulating dose the immunity can be brought back. That should be kept in mind.

With regard to the treatment of the active case, I think Dr. McIlwaine is to be congratulated when we consider his mortality of only one per cent. When compared to the general mortality of twenty-five per cent in that age group he indeed merits congratulation.

As I said in the beginning, specific agents for the active treatment of whooping cough are very meagre. The sulfonamides are coming into use for treatment of complications. Aside from these, other effective agents are rare. Two things used are hyperimmune rabbit serum and hyperimmune human serum. My own experience with rabbit serum has been very limited, but I have been favorably impressed. I have used rabbit serum in only two cases. One problem is the very high cost. It costs fifteen dollars a dose.

Where the hyperimmune human serum has been used in infants under two months of age the mortality was two per cent. The difficulty here is that the serum is not generally available to us in general practice. But these two agents do stand out as offering some hope.

As Dr. McIlwaine said, the wide variety of drugs used in treating whooping cough is an indication of their lack of efficacy. About all we can do in most cases is to try to prevent complications and endeavor to keep up the child's general nutrition. It is, of course, a very difficult procedure to handle these young infants when they actually have whooping cough. That takes us back to the question of the importance of routine immunization of all infants during the first year of life. Around the middle of the first year I think is generally considered the optimum time for immunization.

A STUDY OF THE VALUE OF A PERTUSSIS VACCINE*

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and

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In 1939, Kendrick and Eldering¹ published a report of the results obtained by using a pertussis vaccine washed once with saline, on a group of 1,815 children from eight months to six years of age. These children and the 2,397 controls were selected from a metropolitan area with an unusually stable population, 60 per cent of the families being home owners.

The results were based on a period of observation of thirty-nine months. Fifty-two cases of pertussis developed among the vaccinated children and 348 cases among the controls. The attacks among the vaccinated lot were less severe than among the controls.

Through the courtesy of the Bureau of Laboratories, Michigan Department of Health, a supply of this vaccine was furnished for use in the Child Welfare Clinic of the Pediatric Department at the Medical College of Virginia.

The vaccine consisted of a seventy-two hour growth of *H. pertussis* on Bordet-Gengou medium, washed off in a small amount of saline; the suspension then being filtered through cotton and centrifuged. The organisms were resuspended in saline with a killing agent and stored in a cold room until sterile. The killed suspension was standardized to ten billion organisms per cc. It was tested for agglutinability with specific antiserum and for ability to produce agglutinin in rabbits.

This vaccine was administered in the clinic by the nurse in charge under the supervision of the head of the pediatric department. It was given in four weekly subcutaneous injections of 1, 1.5, 1.5, and 3 cc., the last injection being divided into equal bilateral injections.

The cases were selected from children between the ages of eight months and four years who had

not been previously exposed to pertussis nor vaccinated against it. However, this group also contained seven infants of approximately six months, and three children of seven years. The average age of the group was thirteen months and the median age was ten months.

The controls were selected from the same age group and within the same families in as far as possible. The large majority came from poor income or relief brackets and lived in crowded city areas.

The experiment ran from May, 1940, to September, 1943—or a total of thirty-nine months. In all, 317 children (75 white and 242 Negro) were vaccinated. One hundred thirty-two children (16 white and 117 Negro) served as controls. Of the vaccinated group, 300 received all four injections, 7 received three, 1 received two, and the remaining 9 received only one injection.

The cases and controls received a home visit by a case worker or nurse approximately every four months, during the thirty-nine month period of observation. The code for reporting exposure to the disease and severity of the disease when it developed was the same as that used by Kendrick and Eldering.¹

VACCINATED GROUP. Among the 317 vaccinated children, a history of definite exposure was obtained in 34, indefinite exposure in 52. A number from both groups had repeated neighborhood exposures during this period. The home exposures were most intimate, patients and exposees often sleeping in the same bed and as one grandmother said: "even licking off the same sucker".

Thirty-six children did not develop the disease during varying periods following inoculations, but were lost before the end of the observation period, either by moving from the city or by moving within the city without leaving a forwarding address.

In the 291 cases followed throughout the entire period, 7 cases of pertussis developed, 1 of which

*Thanks are due Dr. Lee E. Sutton, Jr., and Dr. A. J. Borowski for reading the manuscript and for advice.

This work was aided largely by personnel from a W.P.A. project and by funds from the Research Committee of the Medical College of Virginia.

Vaccine was furnished by Dr. Pearl Kendrick, of the Michigan Department of Health Laboratories.

could not be verified. The following table shows the pertinent facts concerning these cases:

Cases 1-2-4-5 must be thrown out of the series since no time was allowed for the development of active immunity before exposure.

Case 3 was said to have developed the disease about seventeen months after immunization by a

second injection which continued about two months without any additional findings. One child, who is not included in the series, developed a fever after each of two injections and was not continued. There was an occasional complaint of a little local soreness or lump at the site of injection for two or three days.

NAME	AGE AT TIME OF INOCULATION	NO. OF INJECTION	DATE OF EXPOSURE	LENGTH OF TIME AFTER INOCULATION BEFORE SYMPTOMS DEVELOPED	NATURE OF SYMPTOMS
1. J. L.	7 months	4	Before last inoculation	After last inoculation	Light
2. R. H.	18 months	1	After first inoculation	After first inoculation	Unknown Case not followed
3. R. J.	7 months	4	None determined	17 months	Mother vague. No confirmation at time of home visit.
4. B. B.	11 months	4	Before last inoculation	After last inoculation	Light
5. N. C.	9 months	4	Before last inoculation	After last inoculation	Moderate to severe
6. A. T.	8 months	4	None determined	20 months	Light
7. L. W.	12 months	4	None determined	3 months	Moderate to severe

mother who was unwilling to impart information and who would not state how long or how severely sick the patient was. The child was presumably well at the time of the home visit.

There remain two cases of verified pertussis, numbers 6-7. The severe case occurred in a 15 month old child three months after completion of immunizations. No history of exposure could be elicited. The mild case developed in a 28 month old child, twenty months after inoculation. No history of exposure was elicited. In addition, 3 of the above children developed cold and cough lasting approximately one week, after exposure to pertussis.

CONTROL GROUP. Among the 132 controls, a history of definite exposure was obtained in 3 cases, and of indefinite exposure in 23. From these, there developed 1 light, 1 moderate, and 2 suspicious cases of pertussis. Among those who gave no history of exposure there developed 23 moderate and 7 severe cases, making a total of 34 cases.

VACCINE REACTIONS. Three children developed a mild cold with cough, within a week after the last injection, which was considered a possible vaccine reaction. One child developed a fever after the

CONCLUSION

Because of unavoidable circumstances, there was a shifting and shortage of personnel on several occasions so that the project could not be followed through with the detail intended. However, it seems safe to draw the conclusion that the vaccine used is of definite value in preventing or minimizing the development of pertussis.

The results are presumably even better than the figures show, since indications are that the parents' histories of exposures were inaccurate. It is safe to assume that many more children were exposed than are recorded.

The type of pertussis which developed in the controls indicates that the epidemiology and symptomatology for the years included in the study were average.

SUMMARY

A group of children given pertussis vaccine developed good protection against pertussis.

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AN OUTBREAK OF FOOD POISONING DUE TO STAPHYLOCOCCUS AUREUS

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Outbreaks of food poisoning due to bacteria or their toxic products are by no means rare in our experience. Each year a number of such episodes come to our attention. These usually involve small family groups and their occurrence is a matter of individual rather than of public sanitation. It has been our experience that these minor epidemics are reported to us only after the lapse of several days and examination of the foods concerned in the outbreak has been impossible. The patients are on their way to recovery and show no organisms in stool cultures.

On July 7, 1943, there were reported to us several cases of food poisoning, evidently attributable to a luncheon given twenty hours previously. Investigations in the field as well as in the laboratory gave results which enabled us to trace the outbreak in a satisfactory manner to its original source. The chronological order of events is followed in this narrative report.

About the first of July, a local caterer, called Mrs. A. for purposes of this report, received requests to serve food at two gatherings; one on July 5, food being served to about 45 guests at an afternoon wedding reception; the second on July 6, a luncheon for 70 ladies, wives of Service Officers stationed in Charlottesville. In anticipation of these two events, the caterer purchased fresh chickens which were boiled on the morning of July 5. The meat was picked over by Mrs. X, one of the three individuals handling this food. The portion designed for the wedding luncheon was made into a salad by the addition of home-made boiled dressing. This was served at about 4:00 P. M., five to six hours after its preparation. None of the 45 guests was made ill. A portion of the chicken salad was put aside in the refrigerator by the maid employed at the home where the wedding reception was held. This remained in the refrigerator for 48 hours. It was then eaten by the maid. She became ill three hours later with nausea, vomiting, abdominal cramps and diarrhea.

Chicken from the same source was kept in a me-

chanical refrigerator from the morning of July 5 until late in the evening. It was then made into jellied chicken by the addition of the concentrated chicken broth, the entire process being finished about 1:30 A. M. on July 6. It was kept in the mechanical refrigerator until about noon on July 6 and was served at the luncheon at 1 P. M. The menu served on that occasion consisted of a cold plate with jellied chicken containing peas, slices of hard-boiled egg with salad dressing; rolls, butter, cottage cheese and tomato salad, iced tea, and apple butter tart.

Many of those partaking of this food were made ill in from three to 42 hours. The median incubation period was five hours and the mean period 6.3 hours. The symptoms varied in intensity, but in general were characterized by nausea and vomiting, severe abdominal cramps, diarrhea and weakness.

Of the 70 persons partaking of this luncheon, we were able to acquire information from 61 by questionnaire and personal interviews by members of the Joint Health Department's nursing staff.

CLINICAL DATA

Of the 61 guests interviewed, 43 or 70 per cent were ill in some degree. Of 53 guests reporting that they ate some of every food at the banquet, 37 were made ill and 16 reported no illness. A few of these later, however, admitted slight abdominal discomfort. Of the eight women who chose only certain items of the menu, two were not affected. One of these ate everything but the cottage cheese; the other ate nothing but a sliced tomato. Six guests who ate only certain items on the menu were among those made sick. An analysis of their selections showed nothing significant, except that the only article of food eaten by all was the jellied chicken and peas.

An analysis of the symptoms suffered by the 43 sick individuals showed the following in decreasing order of frequency:

- (1) Abdominal pain and cramps.
- (2) Nausea.
- (3) Diarrhea.

- (4) Vomiting.
- (5) Weakness.
- (6) Dizziness.
- (7) Generalized muscular aches.
- (8) Headache.
- (9) Prostration.
- (10) Fever.

Most of the victims complained of multiple symptoms; for example, abdominal pain and nausea, each reported by 35 persons, coincided in 29 of them, or 83 per cent. Two individuals who were sick did not report symptoms in detail.

Forty-one individuals reported with accuracy the duration of their illness. The maximum was 48 hours, in seven instances; the minimum two hours, in a single individual. The mean duration of illness was 18.7 hours.

No complications outside of the symptoms reported above were noted, and all of the patients made complete and uneventful recoveries.

LABORATORY DATA

Specimens of watery, foul-smelling stools were submitted for examination. None contained mucus or gross blood. Plating on the usual media for the isolation of enteric pathogens gave no unusual organisms of the *Salmonella*, *Shigella* or *Proteus* groups.

A composite mixture of the foods served on the cold plate of July 6 was obtained. These were separated out as far as was possible and cultures made from portions fairly free of other ingredients. Jellyed chicken, the peas in the jellyed chicken, the salad dressing and egg yolk were cultured on eosin methylene blue plates and on blood agar. Smears made from these specimens showed a few sporulating gram positive bacilli, rare gram negative bacilli, and numerous gram positive cocci, singly, in pairs and in small groups. No pathogens of the enteric series were isolated from the plates. On blood agar, almost pure cultures of *Staphylococcus aureus* were obtained from each of the ingredients. The growth was profuse, between 150 and 300 colonies being present on each plate. Of these the following percentages were *Staphylococcus aureus*:

Salad dressing	-----90.3%
Jellyed chicken	-----72.6%
Peas from jellyed chicken	-----73.0%
Egg yolk	-----86.0%

All these strains, as well as those subsequently re-

covered from the nose and throat of the carrier, probably responsible for the contamination of the food, were hemolytic on blood agar, formed golden yellow pigment, both on blood agar, and on brom-thymol blue agar, fermented mannitol, and produced coagulase; all of which are indicative of the pathogenicity of the organism.

One of us examined the three persons engaged in the preparation of this food. None of the three showed any skin lesions which might have been the source of the staphylococci. Nose and throat cultures were taken on July 8. Mrs. X, who had picked over the entire lot of chicken and assisted in the preparation of both the chicken salad and jellyed chicken, had a pure culture of *Staphylococcus aureus* in her nose and a large number of the same organisms in her throat. Mrs. A, the caterer, had three colonies of this organism in cultures from her throat but none in her nose cultures. The third member of the personnel failed to show the presence of the organism.

The carrier, Mrs. X, had had sinus trouble for a number of years and suffered from eighth nerve deafness. Positive cultures were obtained on July 8 and 12. Following this an intensive regime of treatment under the care of a rhinologist resulted in one negative culture on July 20. Despite the treatment, however, the cultures taken on August 12 and September 22 were again positive.

DISCUSSION

The evidence outlined above allows us to summarize the probable chain of events. Mrs. X, while showing no symptoms, was a nasal and faucial carrier of virulent *Staphylococcus aureus*. In preparing the chicken on July 5, she contaminated this ingredient as well as the salad dressing. The chicken salad served five to six hours after its manufacture failed to produce symptoms in the guests at the wedding reception because the organism had not had time to produce a sufficient quantity of its enterotoxin. One portion, put aside at between 45°F. and 50°F., and eaten 54 hours after its preparation, produced typical illness in the one individual consuming it. Refrigerator temperatures, unless below 40°F., do not inhibit the growth of this organism or the elaboration of its toxin.

Either the jellyed chicken or the salad dressing, or both, which were served on July 6 were similarly contaminated. Both these ingredients were

kept in an ice-box for 24 hours before being served, and at atmospheric temperature for two hours immediately prior to their use. The remaining items on the menu of July 6 may be dismissed with a brief comment. The butter used was made from pasteurized milk. The cottage cheese was likewise prepared. Both these materials were picked up from the dairy about an hour before the luncheon. No other cases of food poisoning were unearthed by a canvass of the local hospitals and physicians, and the samples of these two items served at the luncheon represented only a small portion of the lots made up and sold by the dairy. None of the other items on the menu could be considered seriously.

Rough estimates of the number of *Staphylococcus aureus* in the salad dressing, based on the count per oil immersion field, placed these organisms at from 5,000,000 to 8,000,000 per cc. It should be remembered, however, that the sample was picked up 24 hours after the luncheon of July 6, and that the organisms had had an opportunity to increase considerably during that period. Likewise, little significance can be attached to the relative proportion of the organisms in the various ingredients of the menu, not only because of this extra period of growth, but also because of the impossibility of entirely separating the ingredients from the composite sample submitted.

The symptoms of those attacked were entirely compatible with the diagnosis of staphylococcus food poisoning. The relatively short incubation period, the sudden onset, the short though severe nature of the illness, and the rapid and complete recovery are characteristic of this type of epidemic. The variations seen in individual case histories are those usually encountered and are undoubtedly due to the varying amounts of the infected food consumed and to the imponderable factor of individual susceptibility.

We would lay particular stress, as we did in our opening paragraph, on the prompt reporting of these cases which enabled us to secure specimens of the foods served before they were discarded. All too frequently delayed reporting prevents the examination of these samples which furnish the connecting link between carrier and outbreak, and which also give much needed valuable information, not only on the types of food which may be suspected in future outbreaks, but also on the defects in food handling which made such outbreaks possible.

SUMMARY AND CONCLUSIONS

1. An epidemic of food poisoning due to *Staphylococcus aureus* is described. A carrier, harboring these organisms in her nose and throat, probably infected either home-made boiled salad dressing or chicken, or both.

2. The consumption of this infected food within five or six hours of its preparation caused no symptoms in a group of 45 individuals.

3. One portion of this food, consumed after 54 hours at refrigerator temperature, produced typical symptoms in the one individual eating it.

4. Both the chicken and the salad dressing prepared at this time were served 26 hours later to a group of 70 adult ladies. Of 61 who were interviewed, 43 showed, in varying degree, symptoms of food poisoning.

5. Laboratory examinations of the food served at this luncheon were made possible only by the prompt reporting of the cases.

6. Despite intensive treatment by a specialist, the carrier of *Staphylococcus aureus* believed to be responsible for this epidemic still continues to show *Staphylococcus aureus* in nose and throat cultures.

LONGEVITY OF FUNGI ON CARRIERS

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The evaluation of germicides (fungicidal, bactericidal, virucidal agents) is a problem of special attraction. It involves a host of theoretical and practical questions. Innumerable experiments have been performed, standard methods have been established, and yet new questions and problems arise almost unceasingly. The expression "new questions" does not refer primarily to the testing of recently invented or discovered germicidal substances, though in this field too fundamental findings are liable to occur. In this connection it may suffice to mention the chemical disinfectant zephiran chloride² and the antibiotics produced by micro-organisms.³

"New questions" refers rather to the fact that the solution of one problem in the field of disinfection very often gives birth to one or more new problems. It has been said that, if the solution of a problem engenders a new question, the first problem was a sound one. It seems then, that the development in the field of disinfection is on the right way.

Sometime ago it became necessary to devise a method for testing fungicides, since the then known methods were not satisfactory. The procedure has been described in this journal.¹ The technic is to infect suitable carriers (cotton strings, filter paper, etc.) with the fungus to be tested. The special way of infecting the carrier insures that the fungus adheres to the carrier without losing its natural texture.

As mentioned in the former communication,¹ it was planned to test the longevity of fungi adherent to carriers. These experiments have now been performed with the following fungi: *Trichophyton gypsum*, *Microsporon audouini*, *Microsporon lanosum*. The results are given in the tables below.

The results with *Trichophyton gypsum* and *Microsporon lanosum* demonstrate that these fungi adherent to carriers remain alive for at least several months; *Microsporon audouini* yielded somewhat inconsistent results. However, the period of survival extended to 276 days.

It seems that a certain amount of moisture en-

hances the viability of the fungi on the carrier.

In the course of our disinfection experiments with fungi, we have observed peculiar changes in the

TABLE 1
Trichophyton Gypsum

Carrier	Days after infection, when tested	Result
Cotton string	102 days	Growth
" "	119 "	"
" "	239 "	"
" "	253 "	"
Filter paper	283 "	"
Linen	314 "	"
Cotton string	346 "	"

TABLE 2
Microsporon Audouini

Carrier	Days after infection, when tested	Result
Cotton string	78 days	Contaminated
" "	180 "	Growth
" "	217 "	No growth
" "	276 "	Growth

TABLE 3
Microsporon Lanosum

Carrier	Days after infection, when tested	Result
Cotton string	102 days	Growth
" "	138 "	"
" "	180 "	"
" "	235 "	"

growth of *Trichophyton gypsum*. The cause of these phenomena is under investigation, and the results will be reported in due time.

SUMMARY

Experiments for testing the viability of fungi adherent to carriers have revealed that *Trichophyton gypsum*, *Microsporon audouini* and *Microsporon lanosum* may survive for at least several months. This fact offers the possibility of shipping infected

carriers to various places. This involves two advantages: (1) easier method of shipment, and (2) the possibility of performing similar experiments at distant places with identical fungus material.

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A Message from the Surgeons General of the Army and Navy to the Physicians of the United States

On March 18, 1944, the Emergency Maternity and Infant Care program for the wives and infants of enlisted men in the four lowest pay grades of the armed forces of the United States will have completed its first year. Approximately a quarter of a million wives and infants will have been given care under the program. More than 90 per cent of this number are wives of enlisted men; nearly 10 per cent are their newborn infants. Medical, nursing and hospital care is being made available in army and navy installations where it does not interfere with the care of the soldier and where it can be given without increasing existing facilities. Whatever other care is available in the place where the wife and infant are living is being given through the civilian authorities.

Physicians the country over are contributing their medical skill to this wartime program generously and in return for moderate recompense. Hospitals the country over have opened their doors to these wives and their infants making available accommodations where their medical needs can be met adequately, though without luxury care. Nurses the country over are helping in the city and the rural homes and in the hospitals.

All this is being carried out voluntarily by those who are participating in the program. All this is being done in spite of the great shortage of physicians and nurses serving the civilian population—a shortage caused by the entry into the armed forces of thousands of our physicians and nurses.

This program of maternity and infant care for wives and infants of enlisted men is made possible by grants from the Federal Government through the

Children's Bureau of the Department of Labor and the State health agencies, for the purpose of relieving anxiety among the enlisted men as to how the costs of maternity care for their wives, or the costs of medical care for their infants, will be met in their absence from home while in the armed forces—when, for a great majority, their family income has been lowered materially. The program carried out by the State health agencies brings assurance to the enlisted men that their national and State governments are doing whatever is in their power to make care available to their wives and infants, that physicians throughout the country are helping.

The morale in the armed forces is being raised and our fighting men go overseas with greater confidence in the security of their families because of this wartime program.

We who are responsible for the health and medical care of the men in the armed forces are grateful to you—physicians, nurses, and hospitals—who are participating in this program of care for the wives and infants of these men. You are sharing with us our normal peacetime responsibility of caring for the families of our men, and so are making it possible for us to give our best efforts to the men themselves.

Your contribution is an invaluable aid to us in the prosecution of the war, and we count on your carrying this program forward in the year to come with the same generous spirit you have shown in the past year.

(signed) ROSS T. McINTIRE,
Vice Admiral, M.C., U.S.N.,
The Surgeon General of the Navy.

(signed) NORMAN T. KIRK,
Major General, U.S. Army,
The Surgeon General.

THE ARMY SPECIALIZED TRAINING UNIT AT THE MEDICAL COLLEGE OF VIRGINIA

J. M. DIXON, M.D.,
Major, M.C., United States Army,
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Richmond.

GENERAL

There are now approximately 300 medical and dental students in the Army Specialized Training Unit at the Medical College of Virginia. For a number of years there has been an ROTC Unit in the School of Medicine, which still exists on a much reduced scale. On June 3, 1943, the 3313th Service Unit (ASTU) was activated at this school, and physically qualified medical and dental students, including most of those in the ROTC Unit, were inducted into the Army, processed at Camp Lee, and transferred back to the College as members of the ASTU. By contract with the Government, the Schools of Medicine and Dentistry agreed to furnish professional instruction to certain enlisted men in the Army. However, in this case, these enlisted men happened to be men who were already medical and dental students in the College, who were immediately inducted into the Army, and who are to continue in school as enlisted men until graduation, or as long as the contract is in force.

SELECTION OF TRAINEES*

As stated above, the original members of the Unit were students already in college. Those members of the Unit who enter the classes starting December 30, 1943, and October 4, 1944, are men who are selected by the College, just as the College has always selected its students.

Civilians selected by the college for Medicine or Dentistry who possess evidence that their orders for pre-induction physical examinations were dated prior to March 1, 1944, can expect to be transferred to this college in October, 1944.

Soldiers on active duty who have letters of acceptance dated prior to April 1, 1944, from schools of Medicine or Dentistry can expect to be transferred to the college for the October, 1944, class, provided they have not been alerted for overseas shipment. Provision is also made for students taking pre-medicine or pre-dentistry while on an inactive status as enlisted reservists or who hold com-

missions in the Medical Administrative Corps to be transferred to A.S.T.P. when accepted by the college for the October 44 Class.

During the period between entry into the service and transfer to the college in October, 1944, eligible students are attached to Army Medical Installations in the vicinity of the college. Most of these men are in hospitals or dental clinics receiving Army Medical Department Training.

Starting with the first class in 1945, students for professional training in the ASTP will be selected by Army Selection Boards from among those students now in pre-medical A.S.T. Units. These Selection Boards will consist of Army personnel and civilian representatives from the various Medical Colleges, who will act as consultants, and who have the power of veto over any applicant. Since there are a great many more students taking pre-professional training in Army Specialized Training Units than the number of vacancies existing in Medical and Dental Colleges, there will be a great deal of competition for the appointments. Starting with the 1945 class, the quota planned in the medical classes is an allotment of 55 per cent Army, 25 per cent Navy, and 20 per cent civilian students. Civilians must be deferred under current selective service regulations.

MILITARY STATUS

Trainees in the Unit have the same military status as any soldier, and they are governed by Army Regulations, the Articles of War, and are subject to Courts-Martial. They are detailed to the Unit as a duty assignment, under the direct command of the Commandant of the Unit. Each is a Private First Class, whose term of service, under present laws, is for the duration plus six months. Trainees are under no more nor less obligation to the Government than any other soldier who is enlisted for the duration plus six months.

The Unit is administered by the Professor of Military Science and Tactics, in his capacity of Unit Commandant. The Commandant is assisted

*Policy as of April 14, 1944.

by one Captain, one First Lieutenant, one Second Lieutenant, and seven enlisted men. These overhead personnel are known as the Permanent Cadre. The Commandant is responsible for fulfilling the best interests of the Government, the College and the Trainees. He must see that the contract between the College and the Government is fulfilled. Under Army Regulations, the assignment of the P.M.S.&T., who is also the Commandant, is a function of the Service Command, and "All details of officers at civil educational institutions for duty with units of the Reserve Officers Training Corps will be made with the concurrence of the institutional authorities concerned."

Discipline, with the trainees, is not a problem. There are very few military requirements other than prompt attendance at classes and the military courtesy prescribed for all soldiers.

SEPARATION FROM THE UNIT

The Contract between the College and the Government provides that "The War Department may withdraw any Army trainee at any time it may elect to do so, and it will do so upon the written request of the Contractor (College) in the case of any Army trainee who fails to meet the academic requirements of the Contractor." In the past, those students who have been separated from the Unit prior to graduation have been sent to a Medical Replacement Training Center, where they are retained in the Medical Department of the Army as enlisted men. Students are not transferred to other duties in the Service before graduation, except for academic failure, or when transfer is obviously justified.

There are two reasons why the percentage of academic failures should be lower among Army trainees than the percentage of failures among civilians in peacetime. First is the freedom from financial struggles, and the second is selection of men who meet Army physical requirements.

At the time of graduation, trainees are discharged from the Service as enlisted men, and commissioned as First Lieutenants in the Medical or Dental Corps. The Dental graduates are called to active duty immediately, provided vacancies exist in the Dental Corps. All of the Dental Class graduating December 18, 1943, received orders to a Medical Replacement Training Center, effective three or four weeks

later, allowing time for the State Board examinations.

Medical Graduates are commissioned, and placed on an inactive status until the completion of their internship, which is now a nine month internship, preferably rotating. At the end of the nine month internship, some are given additional deferment for residencies, and the remainder are called to active duty.

DAILY ROUTINE

There are no Army Barracks at this Medical college, and trainees are paid a monetary allowance in lieu of rations and quarters. They may select a place to live anywhere within reasonable commuting distance of the College. Most trainees live in private homes or fraternity houses, as they have always done.

The Unit is organized on the Cadet system. By that System, selected trainees are given Cadet rank from Corporal to Captain, and as such are entitled to the respect and exercise of authority commensurate with their rank. Cadet officers are frequently those trainees who have had previous military training, and many are graduates of Virginia Polytechnic Institute, Virginia Military Institute or the Citadel, and one student in the December 1943 Class was a graduate of the U. S. Military Academy at West Point, with two years of service in the Regular Army as a commissioned officer.

The class rolls are checked in each class for those absent or late. The Senior Cadet Officer in each class is responsible for this duty. Prompt attendance at all classes is strictly enforced. Students realize that spending thirty-six months as a medical student at Government expense is quite different from spending that time in a fox hole, and most of them are putting forth their best effort.

The proper rendering of all military courtesy is emphasized. That gives the men valuable training, and pride in their military status, without requiring time from their studies.

Each student receives one hour of class room instruction per week in Military Science and Tactics, and in the functions of the Medical Department. This instruction is very similar to that given the ROTC students in the past, with emphasis on the military changes of modern warfare. In addition to the military class room work, the Unit has an average of one hour per week of military formations, such as close order drill, road marches, or a trip to

the Richmond Air Base to go through the gas chamber, etc. These outdoor periods are customarily held on Saturday afternoon, and are for the dual purpose of training and mental relaxation. Physical training for medical units is optional with the local Commandant. Physical training is needed by medical students, but no suitable time or place has been found in the crowded schedule of this school.

All military activities are necessarily limited by the demands made on the time of the students by academic requirements.

BENEFITS TO TRAINEES

Benefits to trainees consist of all those benefits received by any soldier, plus the opportunity to complete a four year professional course during time of war. Nothing has been added to or subtracted from the professional curriculum, except the summer vacation, which a few colleges had subtracted prior to the wartime accelerated program.

The financial advantages to the students are considerable. Trainees are furnished tuition, uniforms, textbooks, instruments, and medical care in the Medical College Hospital at Government expense. The actual pay and allowances of an unmarried trainee is \$138.55 for a 31 day month. For a married trainee with one child, the pay and allowances for

a 31 day month is \$196.55, with \$20.00 more per month for each additional child. A married trainee with no children receives \$166.55 for a 31 day month. Of course, they are also entitled to Government insurance, and, after discharge from the Service, to any pension or medical care for veterans due any soldier. Shortly after activation of the Unit, there was quite an epidemic of weddings. Medical and Dental students had suddenly become quite desirable, which is a radical change from the "old days", as all alumni can verify.

We are proud to say that members of the Unit contribute very generously to the Red Cross, Community Fund, and War Bond Campaigns. During the month of September 1943, members of the Unit made cash purchases of War Bonds totaling \$7,341.25. This was in addition to those purchased monthly by allotment from their pay.

The one advantage the students appreciate most about the Unit is the privilege of being in uniform. After a young, healthy man has walked the streets of Richmond in civilian clothes for a year, while his country is at war, and has constantly faced the public and his friends with an apology, he appreciates the honor of being in uniform. He opens his books at night with the satisfaction of knowing that he is serving his country where he is needed most.

Fine Dispensary Serves United States Troops Abroad.

So that United States Army personnel can have the best possible medical attention, two general dispensaries in the London area were recently combined to form the most complete overseas dispensary in the world.

This medical installation was the first one set up in the British Isles. In 1942 the unit was both a hospital and dispensary, treating medical, surgical, and lying-in cases alike, but as Army General Hospitals were installed, this dispensary eliminated its wards until now it specializes in medical, light surgical, therapeutic treatment, and laboratory and x-ray diagnosis. Every doctor at this dispen-

sary is a specialist in his field.

The dispensary gives regular medical attention to officers, enlisted men, WACs, civilians working for the Army, and members of the casts of USO Camp Shows. Besides, in emergencies, civilians and others who are air raid casualties are tended. There is a woman doctor and four WAC assistants who attend WACs and civilian women working for the United States Army.

Classes are conducted by specialists on the staff for other officers and enlisted men attached to the dispensary to further add to their medical knowledge and so help keep the American soldier the "best taken care of in the world".

PUBLIC HEALTH

I. C. RIGGIN, M.D.,

State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for March, 1944, as compared with the same month in 1943, and for the period of January through March, 1944, compared with the same period in 1943, follows:

	Mar.		Jan.-	
	1944	1943	1944	1943
Typhoid and Paratyphoid Fever	8	8	17	36
Diarrhea and Dysentery	139	142	474	321
Measles	4,630	2,451	8,638	4,060
Scarlet Fever	413	202	921	611
Diphtheria	12	30	62	123
Poliomyelitis	1	2	2	10
Meningitis	98	145	254	385
Undulant Fever	4	0	10	6
Rocky Mountain Spotted Fever	0	0	1	1
Tularemia	8	4	16	23

DIARRHEA, DYSENTERY AND ALLIED SALMONELLA INFECTIONS IN VIRGINIA

It is not the purpose of this statement to discuss technically the complexities encountered in the routine examination of fecal specimens submitted to the State Health Department. The object is to acquaint the medical profession with what is being accomplished especially with the Salmonella group of organisms.

In 1898 Shiga established by bacteriological methods the cause of bacillary dysentery which bears his name. By self-inoculation of killed cultures of his organism, he proved that the organism was responsible for the occurrence of a severe type of dysentery. This form oftentimes is found in Japan and is accompanied by a high mortality rate. As is known, this type of bacillary dysentery has since been found in many other parts of the world.

Two years later Simon Flexner, in the course of an investigation of tropical diseases in the Philippines among American troops, discovered an organism associated with dysentery which he believed to be similar to the one described by Shiga. Further work on this organism by Strong and Musgrave indicated that Flexner's organism was not identical to the one found by Shiga, but to be one of much less virulence and a member of an heterogeneous group capable of causing dysentery and having different

biological and serological properties, though similar in many other respects.

Following the classical achievements of the above two investigators, other specific organisms have been found in recent years to be the cause of bacillary dysentery, viz., the Schmitz, Sonne, and New Castle types. Generally speaking, the Shiga type of bacillary dysentery is regarded as being the most virulent of all, probably due to its ability to excrete a soluble toxin which has been found lacking in the other recognized types. Irrespective of the toxin producing ability of the Shiga variety and the absence of toxins in the other types, these organisms sometimes show great variation in the severity of symptoms among similar clinical cases.

In the diagnosis of dysentery and gastro-enteritis, the importance of the toxins in botulism and staphylococcus infections must be borne in mind. In staphylococcus contamination of food there is no satisfactory laboratory procedure whereby one can determine when the usually unimportant strain of this variety may flare up and develop a highly virulent toxin.

To the above established causes of bacillary dysentery may now be mentioned a group of organisms of doubtful etiology. These organisms frequently are found in the stools of persons suffering from diarrhea with many of the typical symptoms of bacillary dysentery in which none of the specific incitants are discovered in the stools. They are known as the *Proteus Morgani*, *Alcaligenes*, *Alkaliscens* and *Pyocyaneus bacilli*.

In addition to the bacillary agents of infection, may be added two recognized species of Protozoa, *Endameba Histolytica* and *Giardia Lamblia*.

All of the aforementioned known and suspected causes of dysentery have been found in Virginia. It is of interest to note that the Shiga type of bacillary dysentery appears to remain localized in the southwestern section of the State. No isolation of this type in the eastern portion of the State is known regardless of native migration from the Southwest to other areas.

There remains the *Salmonella*, or so-called "food poisoning group" of organisms to be considered in

enteric fevers and gastro-enteritis infections. Heretofore this group, with the exception of typhoid and the paratyphoids, has been relatively obscure. The infections by this group have not shown any particular decrease or increase. Recognition is made possible due to the perfection of selective laboratory media and refinement in serological methods of specie identification. Most credit is due to the recent brilliant attainment of Kauffmann and White in developing specific agglutinating serum for each variety of organism in this group. The fourth revision of Bergey's classification of the *Salmonella* group of organisms published in 1934 describes twenty-one species. Cultural requirements listed in this volume and used as an aid in the identification of members of this group are now known to be of little value. The serological methods in use at that time for recognition of the individual species were difficult and tedious procedures because certain agglutinins had to be removed from some types of sera prepared with one variety of the group to prevent cross agglutination with other members of the group, all of which are intimately related in antigenic structure.

With the introduction of the Kauffmann-White procedure the confused status of the group has been reduced to that of a well defined and less erring method of identification. Confirmation lies in the fact that since 1934 the present known types found in various parts of the world have increased from twenty-one to more than one hundred.

Much credit for subsequent work in identifying and classification of strains from various sections is due Edwards and Bruner* of the University of Kentucky. These men conduct a *Salmonella* typing center and have recently published their results of a study of 3,090 cultures of this group. These strains were found to represent 59 specific types and were obtained from the following sources, fowls 1,828, horses 53, ruminants 20, swine 476, carnivores 90, rodents 90, and from man 532.

The examination of the 532 *Salmonella* cultures of human origin by Edwards and Bruner covers a seven year study of cultures submitted to them from various parts of the United States and its territories; it represents 41 of the 59 total *Salmonella* species found by them in all varieties of fowls and animals. Of the human fecal isolations, 123 cultures were derived from normal carriers, 225 from cases of

gastro-enteritis, and 86 from enteric fevers. Forty of the 532 cultures were obtained by blood culture. The authors note that the figures do not give a true picture of the relative incidence of infection by the various types of the *Salmonella* group, since some of the more easily identified varieties are recognized in most public health laboratories and are therefore not represented in their study. A brief discussion of the prevalent types encountered follows:

The common para "B" typhoid organism is represented by one culture from a case of gastro-enteritis, and by 58 cultures from enteric fevers; while the closely related Java variety of the same organism constitutes 30 cultures from gastro-enteritis cases, and none from cases of enteric fevers. *S. typhi-murium*, commonly known as *B. aertrycke* and found to be most prevalent in fowls, is represented by 43 cultures from cases of gastro-enteritis, while the Copenhagen variety of the same organism is found in only two similar cases. The authors believe that the majority of human infections caused by the Copenhagen variety can be traced either directly or indirectly to infected pigeons.

S. cholera-suis (so-called American type of *B. suispestifer*) though not represented in their study from fecal isolations, was present in two blood cultures in contrast to their findings of six cultures of the Kunzendorf variety (commonly known as the western European type) from fecal specimens of gastro-enteritis and also from 17 blood cultures, four of which were fatal cases. Eighteen cultures of *S. Newport* were found in carriers as against 31 isolations from fecal material in cases of gastro-enteritis. *S. Newington* occurred 31 times from carriers and in five cases of gastro-enteritis. From the total cultures (369) submitted from persons suffering from all types of infection, 20 known deaths had occurred.

A miscellaneous group of 15 cultures from human sources is described as follows: gall-bladder infections 6, blood stream isolations in endocarditis 2, spinal fluid in meningitis 3, hepatic abscess and shoulder-joint infection 1 each, peri-renal abscess and urine isolation in prostatic involvement comprise 1 each.

S. anatum regarded as the causative organism in the disease "Keel" of ducklings was found in seven cases of gastro-enteritis, while *S. pullorum* associated with "white diarrhea" of chicks was represented

by one culture.

The identification procedure requires the immunization of sixty or more rabbits in the preparation of agglutinating sera. From these many others are prepared by the absorption of certain antigenic components from portions of the original serum.

During the past eighteen months, the bacteriological feces division of the Virginia State Health De-

partment Laboratory has reported eighteen strains of this group, one of which was from a carrier. Nine specific varieties are represented by these strains which were typed by Dr. Edwards. Preliminary procedures seem to indicate that *Salmonella* infection in man in Virginia may be more prevalent than heretofore believed.

*J. Infect. Dis. 72:58, 1943.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

The patient was a twenty-five year old colored multipara who had had two previous pregnancies. There was no prenatal care. At the ninth month of pregnancy bleeding began and the following day a midwife saw the patient, who was still bleeding. A physician was called who found the patient in active labor. A spontaneous delivery of a stillborn child occurred shortly after his arrival. Bleeding had continued throughout the labor and after delivery. The placenta was retained. Pituitrin was given but from the information available to the committee it is not clear when, if ever, the placenta was delivered. A consulting physician saw the patient also, and suggested hospitalization. The bleeding continued, and the patient died about three hours later before the arrival of an ambulance.

COMMENT

This case has been classified by the Maternal Health Committee as a preventable obstetrical death, because of the absence of prenatal care, and neglect on the part of the patient and her family in obtain-

ing medical attention at the onset of the bleeding. In addition, it is felt that the patient after the arrival of the physician should have been referred to a hospital where an attempt could have been made to replace the blood loss by transfusions. Of course, it is not known whether the patient had a placenta previa or a premature separation of a normally implanted placenta, but actually it makes but little difference which was present—as long as the blood loss was replaced. The golden hours for treatment in this patient was the first day of the bleeding even before the arrival of the midwife. For this the patient and her family were at fault. Hospitalization at that time would have given an opportunity for diagnosis and preparations for delivery and transfusions could have been made. Even on the day of delivery hospitalization and adequate treatment for antepartum, intrapartum, and postpartum hemorrhage may have saved this patient's life. Because of these factors, it is felt that this must be considered as a preventable death.

COMMUNICATIONS FROM OUR MEMBERS IN SERVICE

From Major Herman W. Farber, MC., 227th Station Hospital, APO 928, c/o Postmaster, San Francisco, Calif.

I would like for you to change the mailing address of my Virginia Medical Monthly to the address listed below.

I am now in ————. The weather here is hot. And the insects are gigantic and vicious. However considering everything we are getting along quite well.

I find that the standard of medicine practiced over here is comparable to the high standards of that practiced at home. The hospitals are well equipped. What we miss over here more than anything else is beer and Coca-Cola. We also miss getting early news from home. Most of our News Broadcasts come from Australia. We can also hear a Jap propaganda station that plays the latest excellent American Swing music.

Tropical diseases at first were a problem to us in the way of diagnosis. However, we are becoming very rapidly accustomed to seeing them and we are finding it easier to diagnose and treat them. Malaria is quite universal over here. The mosquito and malarial control projects have worked wonders and to see a mosquito over here is unusual. We have to sleep under mosquito netting every night, because it doesn't take but one bite of one Anopheles to give you the chills.

With kindest regards to my many friends in the Society and thanking you for your kindness, I am—

* * * * *

From Lt. Douglass D. Fear, MC., 55th General Hospital, APO 137, c/o Postmaster, New York, N. Y.

Will you please change my APO address on your records from 515 or 9648 to 137, c/o Postmaster, New York?

I certainly enjoy receiving the Virginia Medical Monthly.

* * * * *

From Major Kenneth N. Byrne, MC., 222nd Station Hospital, APO 292, c/o Postmaster, San Francisco, Calif.

Please change my address from APO 109, Unit 2, to APO 292 as shown above.

Incidentally the new APO number is the same as my old office telephone number in Lexington before I entered the service three years ago.

* * * * *

From Captain Russell G. McAllister, MC., 304th Airdrome Squadron, Office of the Surgeon, AAB, Alamogordo, N. Mex.

Thank you very much for your kind letter of March 28, which was forwarded me by my wife. It is good to know that the Medical Society of Virginia remembers me, and is interested in my activities, and I am glad to receive the MONTHLY which I devour page by page when it does arrive. How good it will be, after this show is over, to be a human again and practice in Richmond once more!

My present address is above, and we have been here since January, when we moved from Blythe, California. I will certainly advise you of any future change of address, either directly or through my wife.

* * * * *

The above communications were among those received during the past month from some of our members in the Services. Remember, the folks back home are always interested in hearing from you and knowing how you are getting along. How about writing us more often so we may be able to continue this department?

WOMAN'S AUXILIARY to the MEDICAL SOCIETY OF VIRGINIA

President—MRS. W. CLYDE WEST, Alexandria.

President-Elect—MRS. PAUL C. PEARSON, Turpin.

Recording Secretary—MRS. C. C. SMITH, Norfolk.

Corresponding Secretary—MRS. N. G. SCHUMAN, Alexandria.

Treasurer—MRS. REUBEN F. SIMMS, Richmond.

Chairman, Press and Publicity—MRS. E. LATANE FLANAGAN, Richmond.

Jane Todd Crawford.

Jane Todd Crawford needs no eulogy on these pages! Her life and heroism are well known to all of us, and speak in glowing terms for themselves.

She blazed the trail for those of lesser stature than herself, and it would seem that if anyone deserves a memorial to perpetuate her name and fame through all the years to come—it is she. Such an undertaking as a memorial of this nature, requires time and thought, and a large expenditure of money.

The Southern Medical Auxiliary is working with these three objectives in mind, and while we await the announcement of their plans with a great deal of interest, can not we all, as loyal Virginians, work with them, and contribute something each year to help the Fund to its ultimate growth?

We are not so much concerned with the time, the place, and the nature of the memorial, as that we have a vital part in its completion. Our State President has asked that every member of the Auxiliary contribute a dime this year to the Memorial Fund.

Please let's make it a hundred per cent and "go over the top" in a way that will be gratifying to Mrs. West, as well as ourselves. At this date, three Auxiliaries have already responded to this appeal.

We know that you are interested in this project. May we count on your cooperation as well?

So far, I have been unable to get any new literature on this subject, and until some comes to hand, may I refer you to the book, "Doctors On Horseback", for some interesting reading on the life and heroism of Jane Todd Crawford.

HELEN P. JACKSON

(MRS. J. J. WALKER)

Chairman, Jane Todd Crawford Memorial.

Auxiliary Meetings.

NORFOLK

A general meeting of the Woman's Auxiliary to

the Norfolk County Medical Society was held March 13, followed by a luncheon at Ames and Brownley's tea room.

Dr. Aurelia Nicholls, who inspects in nine city schools, gave an interesting talk on the duties and problems of the school doctor, and stressed the fact that school doctors do not prescribe for or treat those they examine, but offer suggestions in cases they think need attention.

Since this meeting was the Auxiliary's annual celebration of Doctor's Day, Mrs. R. Bryan Grinnan, chairman of Health Education, presented *Annals of Surgery* to the Norfolk County Medical Society in the name of the Auxiliary, and this was accepted for the Society by Dr. N. F. Rodman, its president.

In the business session preceding the luncheon program, the Nominating Committee was appointed by the president, Mrs. R. M. Reynolds, as follows: Mrs. W. E. Butler, chairman; Mrs. H. W. Rogers, Mrs. James W. Anderson, and Mrs. A. G. Horton. Mrs. C. J. Devine, chairman of the War Fund, reported that the Auxiliary had over-subscribed its quota in the Fourth War Loan by \$1,000.00. Mrs. Millard Savage chairman of the Casualty Stations, reported that four of the eleven stations had been closed, and Mrs. Anderson reported the second recreation room completed at Camp Pendleton, and a piano and radio given by members to the Fort Story Hospital. The Auxiliary subscribed \$25.00 to the Red Cross.

Mrs. W. Clyde West of Alexandria, president of the State Auxiliary, who was to have been a guest, was prevented from attending by illness in her family.

CLARA P. BROCK,

(MRS. M. F.)

Chairman, Press and Publicity.

NORTHAMPTON-ACCOMAC

The Woman's Auxiliary to the Northampton-Accomac Medical Societies held its regular quarterly meeting at the lovely new home of Mrs. Joseph E. Gladstone at Exmore, on April 4. Luncheon was served to twenty-one members and Reverend W. K. Haddock, pastor of Franktown Johnson's Methodist Churches, who was guest speaker. Mrs. W. Clyde

West, President of the State Auxiliary, who had been invited, was unable to attend.

Mr. Haddock was introduced by the Chairman of the Program Committee, Mrs. W. T. Green, and gave an interesting talk "The Five Tensions in the World Today".

At the business meeting which followed, Mrs. W. Carey Henderson presided. Minutes of the November and January meetings were read, and the treasurer's and committee reports were given. A program to have all practical nurses registered, and a round up of girls for nursing was discussed. Mrs. J. L. DeCormis then gave an interesting account of the Mid-Winter State Board meeting and of Dr. J. M. Hutcheson's talk on bills before the General Assembly.

The next meeting will be an all day picnic at the cabin of Mrs. W. L. Cosby at "Silver Beach" on July 11.

CATHERINE R. TROWER,
(MRS. E. HOLLAND)

Chairman, Press and Publicity.

WARWICK

The Warwick County Medical Auxiliary met at the home of Mrs. W. R. Payne on April 10, at 8 P. M., with Mrs. W. A. Mitchell, the new president, presiding.

The following is a list of newly elected officers for the year:

Mrs. W. A. Mitchell—President.

Mrs. W. R. Payne—Vice President.

Mrs. L. J. Richman—Secretary.

Mrs. Murray Dick—Treasurer.

A luncheon meeting will be held in May.

MARION HOLDERBY,
(MRS. C. E.)

Publicity Chairman.

BOOK ANNOUNCEMENTS

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us same.

Essentials of Dermatology. By NORMAN TOBIAS, M.D., Senior Instructor in Dermatology, St. Louis University; Assistant Dermatologist, Firmin Desloge and St. Mary's Hospital; Fellow American Academy of Dermatology and Syphilology; etc. Second Edition. J. B. Lippincott Company, Philadelphia. 1944. xiv-497 pages. Cloth. Price \$4.75.

Sulfonamide Therapy in Medical Practice. By FREDERICK C. SMITH, M.D., M.Sc. (Med.), F.A.P.S., Editor of *Philadelphia Medicine*, official organ of the Philadelphia County Medical Society; editor of *The Medical World*; etc. Foreword by GEORGE MORRIS PIERSON, E.S., M.D., Professor of Medicine, Graduate School of Medicine, University of Pennsylvania; etc. Philadelphia, F. A. Davis Company. 1944. xiii-368 pages. Illustrated with numerous engravings, graphs and tables. Cloth. Price \$5.00.

Clinical Lectures on the Gallbladder and Bile Ducts. By SAMUEL WEISS, M.D., F.A.C.P., Clinical Professor of Gastroenterology, N. Y. Polyclinic Medical School and Hospital; Gastroenterologist, Jewish Memorial Hospital, New York. The Year Book Publishers, Inc., Chicago. 1944. 504 pages. Cloth. Price \$5.50.

Clinics. Volume II, Number 5, February, 1944. J. B. Lippincott Company, Philadelphia. 266 pages. Single issue price in cloth \$3.00.

This issue of *Clinics* is particularly significant as it includes a Symposium on War Medicine—the teaching panels presented at the 51st annual meeting of the Association of Military Surgeons of the United States, held in Philadelphia, October 22-23, 1943. The symposium includes discussions on Chemotherapy, Venereal Disease, Fatigue, Fractures, Plastic and Reconstructive Surgery, War Wounds and Burns, and Gastro-Intestinal Disorders. Original contributions in this issue are: Diagnostic Cardio-roentgenography in Army Inductees; A Simple Walking Cast; Burns Incident to War—Measures for their Prevention and Treatment; Management of Purpura; Effect of Shock on Intramuscular Pressures; and Ochronosis: Report of a Case with Alkaptonuria and Melanuria.

Care and Feeding of Children. Revised and Enlarged by L. EMMETT HOLT, JR., M.D., Associate Professor of Pediatrics, Johns Hopkins University; Associate Pediatrician, Johns Hopkins Hospital, Baltimore, Maryland. D. Appleton-Century Company, New York. 1943. xv-321 pages. Cloth. Price \$2.00.

Holt's *Care and Feeding of Children* appears once more revised for the sixteenth time. For any book to go through so many editions justifies its use, for there must have been a great demand for its contents.

This edition has been thoroughly revised and enlarged by Dr. L. Emmett Holt, Jr., the son of the recent author of the book. It is very fortunate that Dr. Holt's son is able to revise this remarkable book in the same capable presentation as his father.

Reading through the book one finds that its contents have been brought up to date with the latest advice on feeding, protection against disease, and the behavior problems which are becoming more numerous due to the modern environment of the child. This book, which on account of its abundance of information for recent parents, has been termed, "the parent's Bible on the care of the infant and child", a term which it rightly deserves.

The revised edition by Dr. Holt, Jr., has kept up the high quality of the book in addition to the information derived from the latest medical scientific knowledge. This book is worthy of every parent's library.

L. E. S.

The Compleat Pediatrician. Practical, Diagnostic, Therapeutic, and Preventive Pediatrics. For the use of Medical Students, Internes, General Practitioners, and Pediatricians. By WILBURT C. DAVISON, M. A., D. Sc., M.D., Professor of Pediatrics, Duke University School of Medicine, and Pediatrician, Duke Hospital; Formerly Acting Head of Department of Pediatrics, The Johns Hopkins University School of Medicine; etc. Fourth Edition. Duke University Press, Durham, N. C. 1943. vi-256 pages and Index. Cloth. Price \$4.00.

The fourth edition of the Compleat Pediatrician is welcomed with great satisfaction by those who have found the previous editions irreplaceable.

Daily use of the former edition in recent years has resulted in the inability of finding the most recent facts concerning the sulfonamides and the tropical diseases which are included in this edition. This additional information adds greatly to the book, relieving the reader at times of the disappointment of not finding the information he seeks. This results in his obtaining the fourth edition to replace his somewhat shopworn third edition.

To those physicians who are not acquainted with the advantages of possessing and using the Compleat Pediatrician it might be said that it is a ready handbook presenting all of the essential information that one would need at a moment's notice which renders it very valuable to the practicing physician and will save him some very embarrassing moments for the lack of desired knowledge. The first three editions in sequence have been continually carried

in my bag as my handy companion to be followed by the fourth.

L. E. S.

Manual of the Diseases of the Eye. By CHARLES H. MAY, M.D., Consulting Ophthalmologist to Bellevue, Mt. Sinai and French Hospitals, New York; Formerly Chief of Clinic and Instructor in Ophthalmology, Medical Department of Columbia University, and Director of the Eye Service at Bellevue Hospital, New York, with the assistance of CHARLES A. PERERA, M.D., Associate in Ophthalmology, College of Physicians and Surgeons, Medical Department of Columbia University, New York; Assistant Attending Ophthalmologist, Presbyterian Hospital, New York. New Eighteenth Edition revised. With 387 illustrations, including 32 plates, and 93 colored figures. Published by William Wood and Company, Baltimore, 1943. Price \$4.00.

The new Eighteenth Edition of Manual of the Diseases of the Eye represents the last effort of the author to bring up to date his so-called brain child before his passing in December, in his eighty-third year. It is said that "just two weeks before his death, he insisted on completing the correction of proof of this edition."

The first edition was published in 1900; through the years the book has been translated into a number of foreign languages, the most recent one being the Portuguese. In the production of the last few editions, Dr. May has been assisted by Dr. Charles A. Perera.

Despite the fact that the present edition has not been increased in size nor changed in scope, the material has been carefully revised and in some instances chapters have been rewritten in order to bring the contents up to date, and to include essential new material. The text adheres, however, to its original plan in supplying a general "foundation of ophthalmologic knowledge for the undergraduate student and the general practitioner of medicine." To conform to the latest report of the Committee of the Eye Section of the A.M.A. on Appraisal of Loss of Visual Efficiency, changes have been made in the pages dealing with Compensation for Eye Injuries.

The appendix presents the ocular requirements for admission to the Army, Navy, Marine Corps, Coast Guard and Aviation Services of the United States. This section embraces general induction standards for all services. These standards, however, as set forth, are subject to change depending upon exigencies of the services.

P. W.

VIRGINIA MEDICAL MONTHLY

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No. 5

The Clinical Significance of the Rh Factor

THE Rh factor, so called because it is found constantly in the rhesus monkey, occurs in 85 per cent of human beings. Persons who are Rh negative develop immune anti-Rh agglutinins when treated with Rh positive blood. A subsequent transfusion with Rh positive blood may lead to a serious or even fatal reaction. This phenomenon is of serious import to an Rh negative woman who marries an Rh positive man. The Rh factor is a dominant Mendelian trait. The Rh positive father may be a heterozygote or a homozygote. If the husband is homozygous, all his children will be Rh positive. If, on the other hand, the husband is heterozygous, the child has a chance of being Rh negative. It seems that the only way to tell if the husband is a homozygote or a heterozygote is to examine the children. If an Rh negative woman has an Rh negative child the father is either Rh negative or a heterozygote.

An Rh negative woman may become sensitized to the Rh agglutinin by the Rh positive fetus she has in her womb. There is present in the fetal red blood cells an antigen inherited from the father which is lacking in the mother. This antigen in the fetal blood may affect the mother's blood, stimulating the formation of destructive antibodies. It is not clear whether or not an actual mingling of the maternal and fetal blood is necessary for this to take place. These antibodies, like other maternal antibodies, diffuse readily into the fetal circulation where they attack the red blood cells containing the antigens, thereby causing erythroblastosis. Usually it is the Rh antigen that is involved, but not always. Other antigens may occasionally cause erythroblastosis fetalis, which is an immunologic incompatibility between fetus and mother. The important clinical fact is that almost always the Rh factor is the one involved and this factor is not recognized in the usual serological tests. The presence of a child with erythroblasto-

sis is good evidence that the mother belongs to the Rh negative group and also that her blood contains destructive Rh antibodies or agglutinins. Should such a mother need a blood transfusion and should Rh positive blood be used, these antibodies and agglutinins in the mother's circulation would agglutinate and hemolyze the transfused blood, and thereby give rise to severe symptoms such as oliguria, and even anuria.

However, the matter is not as simple as this. There are enough exceptions to make it confusing. Whether the exception proves the rule or not we can not say. An Rh positive mother may develop an atypical anti-Rh agglutinin that may affect the infant. Usually, if an Rh negative mother has an infant that is affected with erythroblastosis, all subsequent Rh positive infants will be affected, but this is not invariably so. Occasionally, such a mother will have a normal Rh positive baby even when she has anti-Rh agglutinins in her serum. A great deal remains to be learned about the whole process. Statistically, the combination of an Rh positive infant and an Rh negative mother occurs in 9.46 per cent of all pregnancies, whereas erythroblastosis fetalis occurs only once in 400 pregnancies.

Boorman, Dodd, and Mollison (*J. Obst. & Gynaec. Brit. Emp.* 51:1, Feb. 1944) have recently studied serologically families with a history of hemolytic disease of the fetus, as they prefer to call erythroblastosis fetalis. They divided the families studied into three groups. Group I contains families in which one or more infants were affected with hemolytic disease. Their clinical and pathological criteria for the diagnosis of hemolytic disease were quite strict. Hydrops of the fetus if born alive had to show anemia and erythroblastemia, or if stillborn, there must have been evidence of erythroblastosis in the organs. A stillbirth without hydrops, but with widespread extramedullary erythropoiesis was included. Icterus gravis neonatorum occurring within three days of birth, and followed by severe anemia or by death within ten days, and congenital anemia of the newborn occurring within ten days of birth in the absence of any obvious cause, such as sepsis, were counted. Group II contains families with stillbirths and neonatal deaths in which no proved case of hemolytic disease occurred. In group III they put the cases in which the infants had "physiological jaundice".

In group I there were 100 mothers and of these mothers who had had one or more proved cases of hemolytic disease of the newborn, 97 were Rh negative. Ninety-three of these 97 mothers had anti-Rh agglutinins. In the sera of the 3 Rh positive mothers immune agglutinins incompatible with fetal erythrocytes were found in every case. In one case, the mother, father, and infant, were all group A Rh positive, but the mother's serum contained an agglutinin (anti-Rh₂) which acted upon the infant's and father's red cells. The other two Rh positive mothers had immune anti-B agglutinins of high titre.

In 59 of the 70 mothers who had one or more stillbirths or neonatal deaths (Group II) no evidence of iso-immunization to the Rh factor could be found. Eleven mothers of this group had a demonstrable iso-immunization to the Rh factor, which the authors thought was the cause of the infant death.

Six of the 60 mothers who had normal children (Group III) were Rh negative. In 3 of these cases anti-Rh agglutinins were found in the mother's serum. One of these mothers had a previous infant with icterus gravis and the present infant had only 92 per cent hemoglobin and 15 nucleated red cells per 100 leucocytes on the third day. This infant was known to have been perfectly healthy at the third month of life. The infants of the other two mothers showed not the slightest evidence of hemolytic disease.

The main importance of making Rh grouping tests during pregnancy is the detection of Rh negative women so as to insure that if they need a blood transfusion they shall not receive Rh positive blood.

There is no unanimity of opinion as to the kind of blood an infant with hemolytic disease should receive. Boorman, Dodd, and Mollison are of the opinion that Rh negative blood should be used. Reynolds (*Western J. Obst.* 52:103, Mar. 1944), on the other hand, says that whereas the infant's serum and reticulo-endothelial system contain antibodies that continue to act upon the Rh positive red cells, Rh positive blood is indicated, or at least, first Rh negative and then Rh positive blood should be used. However, he quotes Dr. Madeleine Fallon to the effect that it makes little difference which type of blood be used for transfusion.

Longevity

THE worldwide publicity of anti-reticular cytotoxic serum of Alexander A. Bogomolets and his co-workers brings up the subject of natural longevity. Bogomolets himself has investigated the subject in the Soviet Union. His field workers have discovered nearly 30,000 centenarians. In 1938 in Abkhasia, a Soviet with a population about that of Virginia, 80% of which is rural, there were twelve persons between the ages of 107 and 135 years. Bogomolets is fond of referring to a peasant by the name of Shapovski who lived near Sukhum and to whom he introduced Henri Barbusse, the famous French writer, in 1927. "Barbusse was amazed to find the man actually 140 years old, vigorous, active, with a hearty voice and an even heartier appetite. Shapovski's third wife was then 82 and his youngest daughter 26."

From Aristotle to Bogomolets, writers upon longevity have maintained that man should naturally live to about 103 to 105 years, since the natural term of life of an animal is five times the period needed for its development. The two great factors in influencing the length of life are heredity and environment, and of the two, heredity is considered the more powerful. According to Raymond Pearl, environmental circumstances play their part in determining the duration of life, chiefly by influencing the rate at which the inherited endowment is used up. The majority of centenarians have been small eaters. Poverty, within limits is an advantage as it removes the dangers of over-eating, particularly of meat, after the body has reached maturity. The insurance companies are unanimous in the opinion that excessive use of alcohol is harmful. Most of the 1,720 centenarians in James Easton's list have belonged to the peasant class and the skeptically-minded have argued that this is so because there are no records to refute their claims. Few emperors and kings, and only five popes, have attained the age of four score. Physicians occupy a position between the poor and the politically great. Hippocrates is said to have lived to be 109 years old, but few of his disciples have lived so long. It has been aptly said of physicians, "Aliis inseruiendo consumuntur; aliis medendo moriuntur." William Hotchkiss who died in St. Louis, April 1, 1895, is said to have been 140 years old. His Masonic record was traced back one hundred years and showed conclusively that he was at least 121 years old. Dr. R. Baynes of Rockland, Maine, was practicing medicine at 99. He had an almost perfect set of natural teeth and excellent eyesight. When at home, he never slept in bed but on an iron reclining chair. When William Reynold Salmon of Penllyn Court, Glamorganshire, South Wales, died in his 107th year, he was the oldest known individual of indisputably authenticated age, the oldest physician, the oldest member

of the Royal College of Surgeons, England, and the oldest Freemason in the world. The classical examples of longevity are Henry Jenkins, Thomas Parr and Setrasch Czarten. Henry Jenkins was born in Yorkshire in 1501 and died in 1670, aged 169 years. Registrars of the Chancery and other courts showed that he had appeared in evidence 140 years before his death. Thomas Parr, a poor farmer's servant, was born in 1483. He lived in single blessedness until he was eighty. His first wife lived 32 years, and eight years after her death when he was 120 years old, he married again. When he was 152 years old, the Earl of Arundel and Surray persuaded him to visit the King in London. The journey and the excitement proved too much for him and he died in less than a year. A monument to his memory was erected in Westminster Abbey. Setrasch Czarten was born in Hungary in 1537 and lived for 180 years in one village. He died at the age of 187, or as another authority has it, at 185. In 1895 or thereabouts, there was reported from Vera Cruz in the town of Teluca, where the registers are carefully and efficiently kept, the death of a man 192 years old.

Most of the persons of extreme age have been abstemious in their habits. A few, however, have attributed their age to bad habits. Thomas Wishart of Annandale, Dumfries, who died at the age of 124, chewed tobacco for 117 years. John de la Somet of Virginia was a great smoker and lived to be 130 years old. William Riddell, who died at 116 years carefully avoided water all his life and boasted of his love for brandy.

Of more interest than mere longevity is the preservation of the faculties. Eglebert Hoof, who died at Fishkill, New York, in 1764, at the age of 128, never used spectacles, read assiduously, and retained his memory and senses until his death which was due to an accident. Nicholas Petours, canon of the Cathedral of Constance, died at the age of 137. He was always healthy and vigorous, and celebrated mass five days before he died. Mr. Evans of London was in full possession of his mental faculties when he died at 139 years. R. Glen, a shoemaker of Tacony near Philadelphia, died in his 114th year. He walked to Philadelphia to church every week. There have been several instances of remarkable generative ability in old age. Baron Baravicino de Capelis, the oldest man in Tyrol, died at 104 years. He married his fourth wife at 84. By her he had seven children and she was pregnant with the eighth child at the time of his death. John Gilley who died in Augusta, Maine, in 1813, was born in Ireland in 1690. He came to this country at the age of 60 and married when he was 75 a girl of 18 by whom he had eight children. His wife stated that he was virile until his 120th year.

The most comforting thing about these figures is that many men have displayed worthwhile activity when past four score years. Brougham at 82 and Lyndhurst at 88 could pour forth words of eloquence and sagacity for hours at a time. Landor wrote "Imaginary Conversations" at 85, and Isaak Walton was active with his pen at 90. Chevreul, the chemist, DeLesseps, the canal builder, Gladstone, Bismarck, and Pope Pius IX carried their full mental vigor into old age. Michael Angelo was still painting his great canvases at 89, and Titian at 90 worked with all the vigor of his earlier years. The Doge Dandolo with the aid of the French besieged and captured Constantinople at the age of 83. Newton at 83 worked with the same ardor that animated his middle age. Cornaro was as happy at 90 as at 50, and in far better health at 95 than he was at thirty.

Societies

Virginia State Board of Medical Examiners.

At the meeting of the Board on December 15-17, 1943, the following were granted certificates:

Dr. Abraham Robert Abarbanel, Arlington.
 Dr. Dexter David Abeloff, Boston, Mass.
 Dr. John Stanard Archer, Jr., Richmond.
 Dr. Wilbur James Baggs, Jr., Norfolk.
 Dr. Howard Eugene Baldini, Union City, N. Y.
 Dr. Richard Albert Bagby, Temple, Texas.
 Dr. Bruno Barelare, Jr., Charlottesville.
 Dr. Joseph M. Barker, Arlington County.
 Dr. Walter Louis Barnes, Richmond.
 Dr. Robert Hardy Barnes, Jr., Washington, D. C.
 Dr. William Clayton Barr, Virginia Beach.
 Dr. Thomas Grasty Bell, Staunton.
 Dr. Frank Smoot Beazlie, Jr., University.
 Dr. Morton Emmett Berk, Richmond.
 Dr. Walter Dick Bigford, Purcellville.
 Dr. Joseph Shelton Bower, Lynchburg.
 Dr. Paul Edgar Brady, Newark, Ohio.
 Dr. Maurice Miller Bray, Charlottesville.
 Dr. Albert Compton Broders, Jr., Madison, Wisc.
 Dr. Lenora Virginia Brown, Charlottesville.
 Dr. Mary Tom Bunting, Washington, D. C.
 Dr. Ellsworth Ferrell Cale, Charleston, W. Va.
 Dr. Wayne Calhoon Campbell, Chester, W. Va.
 Dr. Fay Ashton Carmines, Richmond.
 Dr. George Benjamin Carter, Charlottesville.
 Dr. Philip Alexander Caulfield, Washington, D. C.
 Dr. John Letcher Chesnut, Erwin, Tenn.
 Dr. Charles Milton Clark, Jr., Long Island, N. Y.
 Dr. Raymond R. Comess, Charlottesville.
 Dr. William Henry Cox, Richmond.
 Dr. A. Reynolds Crane, Norfolk.
 Dr. James Jefferson Davis, Richmond.
 Dr. Kelley King Davis, Charlottesville.
 Dr. Wirt Lee Davis, Jr., Atlanta, Ga.
 Dr. Walter Frank Daughtrey, Jr., Richmond.
 Dr. Jose Angel DeJesus, University.
 Dr. Paul Henry Dietrich, Petersburg.
 Dr. George Henderson L. Dillard, Cleveland, Ohio.
 Dr. Julian Quayle Early, Mt. Jackson.
 Dr. H. E. Eldridge, Dunn, N. C.
 Dr. Milton Ende, Petersburg.
 Dr. Henry Edwin Ernst, Roanoke.
 Dr. Peyton Randolph Evans, University.
 Dr. William Winfree Farley, Richmond.
 Dr. Donald Terrell Faulkner, Blackstone.
 Dr. Robert Henry Fennell, Jr., Norfolk.
 Dr. Frank Micheal Ferrante, New York, N. Y.
 Dr. Thaddeus George Fibich, Arlington.
 Dr. George Washington Fishburn, Philadelphia, Pa.
 Dr. Walter Cleveland Fitzgerald, Crewe.
 Dr. Irving Edwin Fixel, Richmond.

Dr. Frederick John Flynn, Jr., Jamaica, N. Y.
 Dr. Charles Phillip Ford, Jr., Richmond.
 Dr. S. Oscar Fry, Jefferson County, W. Va.
 Dr. John Burtt Fuller, Richmond.
 Dr. James Cofer Gale, Waverly.
 Dr. James Seibert Gamble, Richmond.
 Dr. Ovidio Joseph Giovanelli, Radford.
 Dr. Thomas Vance Goode, Jr., Richmond.
 Dr. Maston Lewis Gray, New Orleans, La.
 Dr. Isa Costen Grant, Richmond.
 Dr. William Nelson Greever, Chilhowie.
 Dr. Innes Correll Haines, University.
 Dr. Gerald Eugene Hartle, Wardensville, W. Va.
 Dr. Harper Keith Hellems, University.
 Dr. Harry Heim Henderson, Richmond.
 Dr. Elizabeth Harman Hill, Charlottesville.
 Dr. Gunter Hirschburg, Newport News.
 Dr. Robert Arnold Hoffman, Richmond.
 Dr. Sarah Huldah Hoover, Richmond.
 Dr. Joseph David Hough, Franklin.
 Dr. Gwendolyn Sully Hudson, Richmond.
 Dr. Robert Steele Hutcheson, Jr., Lexington.
 Dr. King Arey Jamison, Blacksburg.
 Dr. George Watson James, III, Richmond.
 Dr. William Lipscomb Jamison, Manassas.
 Dr. Alexander Charles Johnson, Jacksonville, Fla.
 Dr. William Richard Kay, Richmond.
 Dr. Walter Thomas Kees, Fredericks Hall.
 Dr. Francis Robert Kelley, Jr., Richmond.
 Dr. Arthur Klein, Richmond.
 Dr. Carl Millard Lang, Charlottesville.
 Dr. William Gordon Leary, Jr., Cincinnati, Ohio.
 Dr. Quentin James Legg, Richmond.
 Dr. Charles Emerson Liddington, Norfolk.
 Dr. Otis Everette Linkous, Jr., Richmond.
 Dr. Marion Cooper Lindel, Seattle, Wash.
 Dr. Garnett William Link, Charlottesville.
 Dr. Leonard Irving Malis, Ventnor, N. J.
 Dr. Shirley Sue Martin, Huntington, W. Va.
 Dr. William Douglas Martin, Radford.
 Dr. Jaun deDios Martinez-Galindo, Charlottesville.
 Dr. Robert Murray Miskimon, Richmond.
 Dr. Virgil Robert May, Jr., Richmond.
 Dr. Robert Earnest McAlpine, Portsmouth.
 Dr. Fred Carlton McCall, Richmond.
 Dr. John Graham McCown, Roanoke.
 Dr. James Edward McGee, Richmond.
 Dr. Edward Thomas McKee, Jr., Norfolk.
 Dr. Robert Edward Lee, McNeely, Dallas, Texas.
 Dr. Howard Everett Medinets, Perth Amboy, N. J.
 Dr. Henry Clarkson Meredith, Jr., Norfolk.
 Dr. Frank Ferdinand Merker, Baltimore, Md.
 Dr. Woodrow Wilson Mills, Kenova, W. Va.
 Dr. Henry Rankin Miller, Washington, D. C.
 Dr. Richard O'Brien Monahan, Roanoke.

Dr. Frederic Pott Moore, II, Richmond.
 Dr. John William Henry Morgan, Ewing.
 Dr. Warren Lodowick Moorman, Salem.
 Dr. Robert Lord Morrison, New Orleans, La.
 Dr. Edward James Mortell, Richmond.
 Dr. John Langdon Moss, Emory, Ga.
 Dr. Marion Bailey Murdock, Grand Rapids, Mich.
 Dr. Anne Newhall, Brookline, Mass.
 Dr. Cardwell Camden Nuckols, Portsmouth.
 Dr. Margaret Bess Obenschain, Washington, D. C.
 Dr. Ruth O'Neal, Richmond.
 Dr. Edwin Johnson Otis, Norfolk.
 Dr. Robert Franklin Owen, Alexandria.
 Dr. Harold Vernon Palmer, Erwin, Tenn.
 Dr. Loren Francis Parmley, Jr., Richmond.
 Dr. William Frederick Pohl, St. Charles.
 Dr. James Harrison Powell, Petersburg.
 Dr. John Marvin Ratliff, Norfolk.
 Dr. Charles Holland Rawls, Richmond.
 Dr. William Hervey Remine, Jr., Richmond.
 Dr. Ashby Turner Richards, Harrisonburg.
 Dr. Bill Ballard Richmond, Beckley, W. Va.
 Dr. Rufus Martin Roll, Washington, D. C.
 Dr. George Samuel Rowlett, Jr., Richmond.
 Dr. John Edward Ryan, Washington, D. C.
 Dr. Robert Saul Salisbury, Richmond.
 Dr. William Callier Salley, Norfolk.
 Dr. Maurice M. Sauturian, Clintwood.
 Dr. Maurice R. Schlanger, New York, N. Y.
 Dr. Donald Conrad Schweiser, Charlotte, N. C.
 Dr. Cyril Iredell Sease, Jr., Richmond.
 Dr. Chauncey Shumaker, Poweron, Ohio.
 Dr. Irving Leonard Silverstein, Richmond.
 Dr. Robert William Sjogren, Blacksburg.
 Dr. Herman Ivan Slate, Alexandria.
 Dr. Charles Everett Smeltzer, Jackson, Mich.
 Dr. Howard Elmer Smith, Roanoke.
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 Dr. Mark B. Williams, Richmond.
 Dr. Grace Evelyn Wilder, Hampton.
 Dr. Harold Eugene Wolfe, Marion.
 Dr. Walter Dickenson Woodward, Richmond.

Dr. Nathaniel Henry Wooding, Halifax.
 Dr. Paul Zwick, Marion.

HOMEOPATHS:

Dr. John Henry Hoge, Norfolk.

OSTEOPATHS:

Dr. Joseph Trivella Rogers, Waverly.
 Dr. Ralph Morton Stokes, Jr., Portsmouth.

The Northampton County Medical Society

Held its regular quarterly meeting at Cape Charles on April the 13th, at which time was held the election of officers for the coming year. This resulted in naming the following: President, Dr. J. M. Lynch, Cape Charles; vice-president, Dr. S. K. Ames, Cape Charles; secretary, Dr. W. C. Henderson (re-elected), Nassawadox; and Censor, Dr. J. E. Gladstone, Exmore.

Dr. W. J. Sturgis of Nassawadox gave a comprehensive resume of advances to date in the use of Penicillin. He stated that, due to its great value to men in the Service, the Government has aided in expanding facilities of biological manufacturers so that it is hoped supplies may soon be sufficient for the release of some for general civilian use. Dr. Sturgis and Dr. H. L. Denoon recently attended a meeting of the American College of Surgeons in Baltimore, where papers were presented on this subject by both civilian and military physicians.

Patrick-Henry Medical Society.

The regular quarterly dinner meeting of this Society was held in Martinsville on April the 7th, at which time delegates and alternates were elected to the State meeting in Richmond. After a short business session, an interesting discussion was given by Dr. Hugh H. Trout of Roanoke on Peripheral Vascular Diseases and a movie was shown to illustrate the treatment of varicose ulcers.

Dr. R. H. Walker and Dr. T. Henry Dickerson, both of Martinsville, are president and secretary, respectively, of this Society.

Medical Society of Northern Virginia.

Dr. H. B. Mulholland of Charlottesville was guest speaker at the Spring meeting of this Society held in Front Royal on April the 14th, his subject being "Some of the Newer Drugs and Their Usage". Other speakers were Drs. L. M. Allen, P. W. Boyd and Leslie M. Bell of Winchester, and Drs. Elizabeth Sherman and W. E. Lynn of Front Royal.

Officers of the Society are Dr. Charles O. Dear-

mont of White Post, president; Dr. B. B. Dutton of Winchester, vice-president; and Dr. J. E. Harris of Winchester, secretary-treasurer.

The Roanoke Academy of Medicine

Held its April meeting on the 3rd, at Hotel Roanoke, under the direction of Dr. E. G. Gill. Addresses were given at this time by Surgeon General Parran of the U. S. Public Health Service, Washington, on "Medical Care of the Civilian Population", and by Rear Admiral Joseph J. A. McMullen, M.C., U.S.N., Washington, on "Recent Advances in Navy Medicine".

Dr. A. M. Groseclose is president and Dr. D. S. Garner secretary.

Richmond Academy of Medicine.

At the March 28th meeting of the Academy, Drs. James F. Blades and Raymond Berger presented a case report on "Diaphragmatic Hernia". Lt. Col. A. O. Hampton, M.C., Chief of the Radiological Section, Walter Reed Hospital, Washington, D. C., was a guest speaker, his subject being "A Radiologist's Viewpoint of Pulmonary Infarction".

At the April 11th meeting, a case report on "Pulmonary Actinomycosis Due to *Actinomyces graminis*" was presented by Dr. John P. Lynch. Dr. Harry Gold, a member of the staff of the Cornell University Medical College, New York City, was guest and spoke on "Management of the Failing Heart".

News

Committee of Arrangements for Richmond Meeting.

The Richmond Academy of Medicine has appointed the following committee for the meeting of the Medical Society of Virginia, October 23-25:

General Chairman—Dr. Harvey B. Haag

Vice-Chairman and Entertainment—Dr. Don S. Daniel

Hotels—Dr. William R. Jordan

Finance—Dr. James Asa Shield

Publicity—Dr. E. L. Copley

Meeting Halls—Dr. C. L. Outland

Golf—Dr. Thomas W. Murrell

Ladies—Mrs. A. G. Shetter

Cards have been sent to members asking for titles and abstracts of papers to be presented at this meeting. Please do not fail to send these to the Society's office by May 15, as the Program Committee plans to meet soon after that time to make up the program. Also if you would like to present a scientific exhibit, send the title and information about it to the chairman, Dr. W. Ambrose McGee, 1601 Monument Avenue, Richmond 20.

Component societies have been asked to elect their delegates and alternates before they recess for the summer. You will want to be included in the list

to be published in the MONTHLY early in the fall and if your Society has not named its representatives, see that it is done promptly.

This promises to be an excellent meeting and the Richmond Committee is already working hard on plans. Be sure to put these dates on your calendar and be in Richmond on October 23-25.

News from the University of Virginia, Department of Medicine.

A Charles Scott Venable Annual Lectureship in Traumatic Surgery has been established in the Medical School of the University of Virginia. This lectureship is supported by royalties from the sale of an adjustable splint designed by Dr. Charles Scott Venable, Jr. The splint has been made available without royalties or encumbrances to the Red Cross and civilian defense agencies and is now in general use both in the United States and Canada. It is standard equipment for the Canadian National Railway. It is also obligatory equipment for all ambulances in the state of Texas.

Dr. Venable was graduated from the Medical School of the University of Virginia in June, 1900. He is chief of staff of the Nix Hospital, San Antonio, Texas, and the seventy-ninth President of the

State Medical Association of Texas, and President of the American Association for the Surgery of Trauma. Dr. Venable's father was professor of mathematics at the University of Virginia from 1866-1896.

On April 11, Dr. Henry B. Mulholland spoke at the meeting of the Medical Society of Northern Virginia in Front Royal, Virginia. His subject was "Some of the Newer Drugs and Their Usage".

Major Henrykzi Borowski spoke at the University of Virginia on April 16. His subject was "Experiences of a Polish Doctor in Peace and War".

Medical College of Virginia News.

Dr. Lewis E. Jarrett, director of the hospital division, has resigned effective June 1, to accept the superintendency of Touro Infirmary, New Orleans, Louisiana. Dr. Jarrett is an alumnus of the college both of the school of pharmacy and of the school of medicine. He was made director of the hospital division in 1933, succeeding Dr. J. L. McElroy who went to Paris, France, as superintendent of the American Hospital.

Dr. I. A. Bigger, professor of surgery, spoke to the staff of the Woodrow Wilson General Hospital, Staunton, on April 13, on *Drainage of the Pleura with Particular Relation to Chest Injuries*.

Dr. W. T. Sanger, president, attended the conference on rural health under the auspices of the Farm Foundation in Chicago, April 10-14.

Dr. DuPont Guerry, III, has been appointed assistant in ophthalmology. Dr. Guerry has recently opened offices in Richmond.

On April 20-21 Dr. Bela Schick, chief of the department of pediatrics, Mount Sinai Hospital, New York, addressed two meetings at the college. The first was the faculty and staff meeting on April 20, when he spoke on *Recent Advances in Pediatrics*, and the second at noon on April 21, when he addressed the student body, faculty, and invited guests on *Allergy*.

Dr. Sidney S. Negus, professor of biochemistry, attended the annual meeting of the American Chemical Society in Cleveland.

Married.

Dr. Walter Dickenson Woodward, Richmond, and Mrs. Alice Myrtle Nevins, Staten Island, N. Y., April 15. Dr. Woodward is a graduate in medicine at the University of Virginia in December, 1943. He is at present stationed at the U. S. Marine Hospital, Staten Island, N. Y.

Lt. (jg.) Harold Eugene Wolfe, MC., USNR., Marion, and Miss Pearl Thomas Simms, Courtland, March 18. Lt. Wolfe is a graduate of the Medical College of Virginia, class of December, 1943.

Dr. Lawrence O. Snead,

Richmond, was inaugurated as President of the Richmond Alumni Club of Phi Delta Theta fraternity at its ninety-sixth Founder's Day Banquet held recently.

Dr. R. D. Garcin, Jr.,

After service for sometime with the Pacific Fleet, has been placed on inactive duty because of a slight injury, and has returned to his home in Richmond where he is engaged in the practice of internal medicine, with offices at 3216 East Broad Street.

The Richmond Eye, Ear, Nose and Throat Society

Held its regular meeting at the Commonwealth Club on April the 11th, at which time the following papers were read:

Newer Concepts in the Surgical Treatment of Cataracts by Dr. Luther C. Brawner and Dr. Edgar Childrey, Jr.

Practical Observations in Otitis Media and Mastoiditis, Bebores and Since Sulfonamides by Dr. Basil B. Jones.

Dr. P. N. Pastore is president and Dr. C. A. Folkes secretary.

Occupational Therapists Needed.

Occupational Therapy is playing an important role in the physical and psychological recovery of our disabled soldiers. Working under the supervision of physicians and psychiatrists, trained therapists are helping hundreds of wounded and neurotic patients find their way back to a useful life.

Under a systematic program of treatment, such

functions as the use of injured arms and legs are restored to patients, and neurotic minds are directed into normal channels. In some cases the occupations may be used as a basis for the patient's future activities and vocations in a normal environment. Government hospitals are in need of qualified therapists to aid in this essential service to the war-wounded.

Any one interested may obtain the necessary application forms from the Secretary, Board of U. S. Civil Service Examiners, at any first- or second-class post office, or from the U. S. Civil Service Commission, Washington 25, D. C. The title of this form is 57/4006-ABC.

Dr. H. Lee Harris,

Formerly on the staff of the Clinch Valley Clinic Hospital at Richlands, has taken over the offices and practice of the late Dr. V. M. Cox, in Reynolds Arcade Building at Bristol, Virginia. His specialty is diseases of the eye, ear, nose and throat.

Dr. A. L. Van Name,

Who has practiced for several years at Center Cross, announces the removal of his home and office to Urbanna.

Dr. B. C. Grigsby,

Who has for the past nine years been associated with the Blue Diamond Coal Company at Bonny Blue, announces the removal of his office to the Dominion National Bank Building in Bristol, Va.-Tenn., where he will be engaged in general practice.

Promotions in Service.

Promotions have recently been noted for the following Virginia doctors in Service:

To Captain in the Navy:

Dr. C. J. Devine, Norfolk.

To Commander:

Dr. M. T. Rosser, Hillsville.

To Colonel:

Dr. Emmett V. Richardson, Marion.

To Major:

Dr. Kenneth N. Byrne, Lexington.

To Captain:

Dr. Samuel F. Driver, Troutville.

Dr. Russell G. McAllister, Richmond.

Dr. H. M. Price, Martinsville.

Dr. George Andrew Shetter, Richmond.

Dr. Weir Mitchell Tucker, Richmond.

Reading (Pa.) Eye, Ear, Nose and Throat Society.

At its meeting on February 16, at Valley Forge General Hospital, an excellent program was presented by Lt. Col. James N. Greear, Jr., chief of the EENT Section. The program consisted of plastic work on war injuries, a new method of bronchography, rehabilitation of blind members of the Armed Forces, retinal detachment, and injuries to the occipital lobes.

Col. Greear is known to many of our readers, being an alumnus of the University of Virginia, Department of Medicine, and an associate member of the Medical Society of Virginia.

Dr. Edgar A. Bocock,

An associate member of the Medical Society of Virginia, superintendent of Gallinger Municipal Hospital, in Washington, D. C., from 1927 to 1943, was recently appointed director of Doctors Hospital in that city and entered upon his new duties in March.

Shipping Address for Your Art Exhibit.

Artist-physicians desiring to exhibit their works at the June A.M.A. meeting should ship their works not later than May 20 to: American Physicians Art Association, Room 1302, 308 W. Washington St., Chicago, Ill. Pack carefully and ship by express collect, including \$50 insurance.

Mead Johnson & Company have offered to pay the express charges both ways (including insurance up to \$50). Art objects exhibited are automatically eligible for inclusion in the next Parergon, as well as for one of the numerous A.P.A. Ass'n. prizes.

Further information may be obtained from Francis H. Redewill, M.D., Secretary, American Physicians Art Association, Flood Bldg., San Francisco, Calif.

Dr. J. A. M. Thompson,

Who had been connected with the medical staff of Blue Ridge Sanatorium, Charlottesville, since October, 1933, on January 1 became clinician with the Tuberculosis X-ray Mobile Unit of the State Department of Health.

The Collection and Transmission of Specimens for Bacteriological and Serological Examination.

A pamphlet giving directions for *The Collection and Transmission of Specimens for Bacteriological and Serological Examination* has been prepared in tabular form, easily accessible, and very useful for students, interns, and practitioners.

It may be obtained free of charge from Dr. Fritz J. von Gutfeld of the Bacteriological Department of the Medical College of Virginia, Richmond.

The Society of Chest Physicians of Virginia

Will meet at Hotel John Marshall, Richmond, Monday, May the 29th. There will be a business session from 10:00 to 10:30 a.m. The following scientific program will start at 10:30:

10:30-12:30 P. M.—Presentation of x-ray films showing interesting chest conditions.

Directed by Dr. C. L. Harrell, Norfolk.

1:00 P. M.—Luncheon—Speaker: Dr. C. M. Sharp, U. S. Public Health Service.

2:00 P. M.

SCIENTIFIC SESSION.

1. Tuberculosis Discovered in Virginia through Selective Service Examinations—Dr. E. C. Harper, Richmond.

Discussion opened by Capt. George W. McCall (MC).

2. The Effect of the Present World War on Tuberculosis—Dr. Frank B. Stafford, Blue Ridge Sanatorium.

Discussion opened by Dr. Dean B. Cole, Richmond.

3. Pneumonectomy in Pulmonary Tuberculosis—Dr. Everett I. Evans, Richmond.

Discussion opened by Dr. M. L. White, Jr., University.

4. The Indications for Terminating Pneumothorax—Dr. Elizabeth C. Cole, Norfolk.

Discussion opened by Dr. L. R. Broome, Catawba Sanatorium.

5. Supervision of Pneumothorax Cases—Dr. R. H. Walker, Martinsville.

Discussion opened by Dr. T. N. Davis, Lynchburg.

Lunch will be served for \$1.50 per plate at Hotel John Marshall.

Dr. Frank B. Stafford of Blue Ridge Sanatorium is president and Dr. E. C. Harper, State Director of Tuberculosis Out-Patient Service, Richmond, is secretary.

Dr. Leon Culbertson,

Class of '36, University of Virginia, Department of Medicine, and later instructor in urology there,

is now assistant professor of urology at Bowman Gray School of Medicine, Wake Forest College, Winston-Salem, N. C.

Arlington County Receives Health Award.

Award of the 1943 National Health Honor Roll to 53 city and county units has been announced by the United States Chamber of Commerce. Among these is Arlington County, Virginia. The awards were based on attainments of high standards in excellence in protecting public health in war time. Emphasis was placed on specific measures to control communicable diseases; sanitation, including protection of milk and food supplies; proper safeguards in maternity care, child health, and welfare; effective health education; adequate industrial health programs and other health services.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

A.M.A.—Transactions of the section on Laryngology, Otolaryngology and Rhinology. 1940, 1941, 1942.

A.M.A.—Transactions of the section on Ophthalmology. 1940, 1941.

Bachmeyer, A. C. ed.—The hospital in modern society. 1943.

Butterweck, J. and Muzzey, G. A.—Handbook for teachers. 1939.

Christopher—Minor surgery. 1944.

Brown, S. A., Davis, Arthur and Lee, Ulysses—The negro caravan.

Cleveland Child Health Association—Manual for the conduct of classes for expectant mothers.

Cushing, Harvey—Bibliography of Ander Vesalius.

Davis, A. and Dollard, J.—Children of bondage. 1940.

Elliott, H. S.—Process of group thinking.

Estabrooks, G. H.—Hypnotism. 1943.

Gesell, Arnold et al.—The first five years of life. 1940.

Fedorova, Nina—The children. 1942.

Fedorova, Nina—The family. 1943.

Fosdick, Harry—On being a real person.

Glasser, Otto, ed.—Handbook of medical physics. 1944.

Groves, Ernest R.—Marriage.

Hamilton, Alice—Exploring the dangerous trades.

The Harvey Lectures, 1942-1943.

Heer, A. L.—Steps to better teaching.

Hollender, A. R.—Office treatment of the nose, throat and ear. 1943.

Hughes, Langston—Not without laughter. 1941.

Keller, A. G.—Manual of the biochemical laboratories of the Graduate Hospital of the University of Pennsylvania. 1944.

- Kisch, Bruno—Strophanthin: Clinical and experimental experiences of the past 25 years.
- Law, Frederick M.—Nasal accessory sinuses Roentgenologically considered.
- McCay, Clive—Nutrition of the dog. 1943.
- Mead, Margaret—From the South Seas.
Coming of age in Samoa.
Growing up in New Guinea.
Sex and temperament. 1939.
- Meyer, K. H.—Natural and synthetic high polymers. 1942.
- N.E.A.—Department of Supervisors—Cooperation: Its principles and practices.
- Newsom, Bryan—Communicable disease workbook. 1942.
- Ormsby & Montgomery—Diseases of the skin. 1943.
- Osler, William—A way of life. 1932.
- Rhinehart, Darmon A.—Roentgenographic technique. 1943.
- Richmond, Winifred V.—Personality—Its development and hygiene. 1943.
- Salter, Andrew—What is hypnosis? 1944.
- Scheinfeld, Amram—You and heredity.
- Transactions of American Laryngological Association. 1943. (Including index of subjects and authors.)
- Travis, L. E. & Baruch, D. W.—Personal problems of everyday life. 1941.
- U. S. Department of Commerce. Bureau of the Census.—Vital statistics of the United States. Part I and II, 1941.
- Williams, Rebecca Yancey—Carry me back.

For Sale—

Office equipment in good condition, including Short Wave Diathermy. Address "Equipment", care this journal, 1200 East Clay Street, Richmond 19, Va. (*Adv.*)

Obituaries

Dr. Warren Taylor Vaughan,

Internationally known Richmond physician, died April 2, following a heart attack. He was fifty-one years of age and graduated from the University of Michigan Medical School in 1916. Dr. Vaughan served during World War I, during which he rose to the rank of Lieutenant-Colonel in charge of Army Hospital Number 41. Shortly after this, he located in Richmond where he specialized in allergy. In 1936, he established the Vaughan-Graham Clinic which has been outstanding in its work in the treatment of allergic diseases. Dr. Vaughan was the author of several books, and was editor and contributor to many medical magazines. He was a

member of numerous medical organizations, among them being the American Society of Clinical Pathologists, the American Rheumatism Association, the Society of Investigative Dermatology, and the International Society of Gastroenterology, and an honorary member of the Institute of the Practice of Medicine of Barcelona, Spain, and the Argentinian Society for the Study of Allergy.

He was also a member of the Beta Theta Phi, Rho Sigma, Sigma Xi, and Alpha Omega Alpha fraternities, and in 1940 he was president of the Harvard Club of Virginia. Dr. Vaughan joined the Medical Society of Virginia in 1920 and was a vice-president in 1931-32. His wife and four sons survive him. Two sons are already practicing physicians and the other two are medical students at Harvard Medical College.

Dr. Samuel Broders Moore,

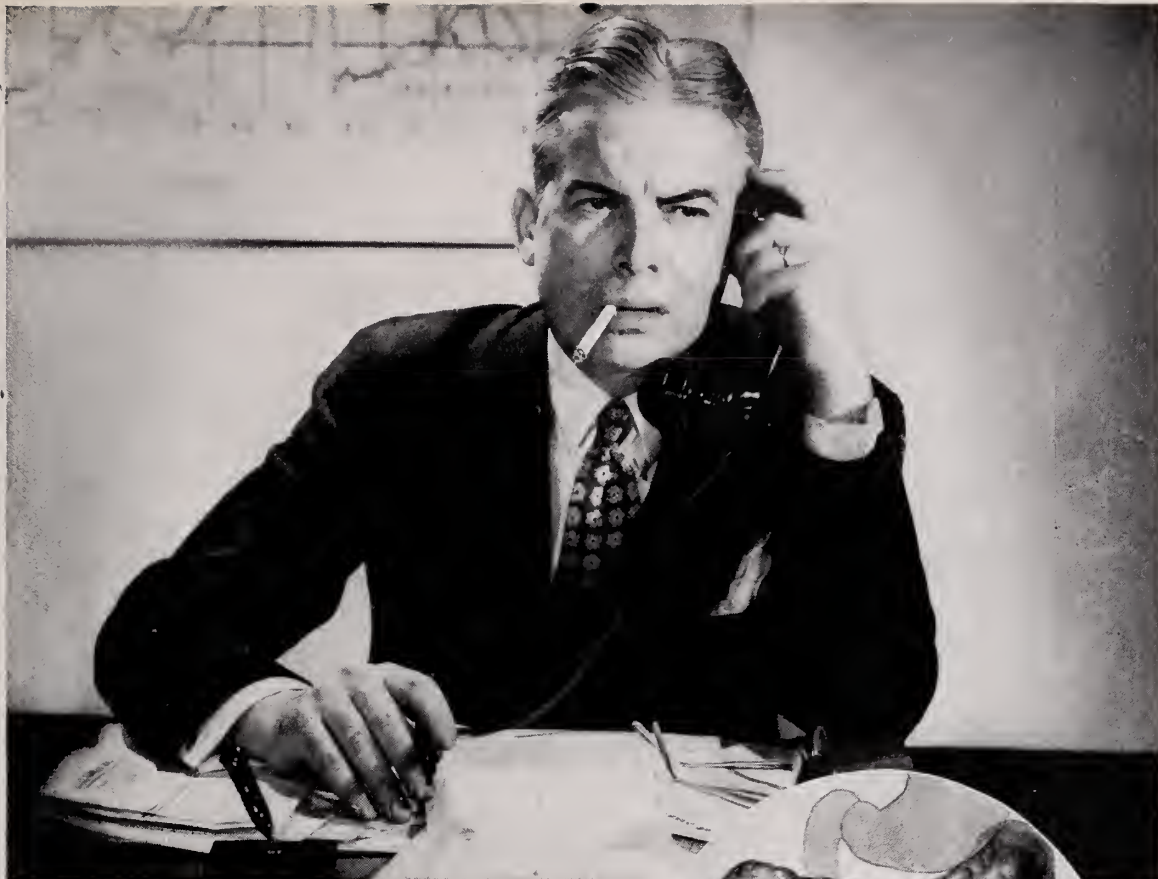
For many years prominent in the professional life of Alexandria, died March the 15th, after a long illness caused by coronary thrombosis with pulmonary edema. He was seventy-two years of age and a graduate in medicine from Georgetown University School of Medicine of Washington, in 1897. Shortly thereafter he joined the Medical Society of Virginia and took an active interest in its work to the time he had to retire because of his health. He was a former vice-president of this Society, a past president of the Alexandria Medical Society, was a fellow in the American College of Surgeons, and identified with other organizations. He was also for sometime surgeon with several railroads and was chief surgeon to the Alexandria Hospital.

Dr. John Adams Drake,

Monroe, died April 14th, at the age of sixty-three. He was a graduate of the Medical College of Virginia in 1903 and had practiced at Monroe for the past twenty years. Dr. Drake was formerly a member of the Medical Society of Virginia.

Dr. Horace L. Goodman,

Ronceverte, W. Va., died February 28, of heart disease. He was a native of Otter River, Campbell County, Va., and was sixty-seven years of age. Dr. Goodman graduated from the Medical College of Virginia in 1901.



FOR THE CONSTIPATION OF NEGLECT...

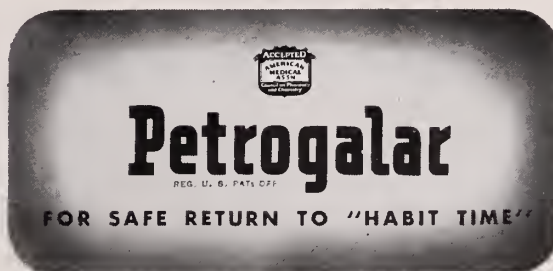


● Pressures and urgencies of modern life too frequently prompt one to stall a bowel that needs emptying—to postpone the call to normal movement. So, the rectum may come to disregard the presence of feces, and feces are likely to become dry, hard to extrude.

Restoration and maintenance of “habit time” is of prime importance to the patient’s well-being. Petrogalar gently, persistently, *safely* helps to establish “habit time” for bowel movement. It is evenly disseminated throughout the bowel, effectively penetrating and softening hard, dry feces, resulting in comfortable elimination with no straining . . . no discomfort to the patient. Petrogalar is to be used only as directed.

A medicinal specialty of Petrogalar Laboratories, Inc., Division WYETH Incorporated, Philadelphia.

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tablespoonful of milk,
formula or water (hot
or cold) makes . . .

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of cereal feeding of
average consistency.

To make thicker feeding (as in pylorospasm, pyloric stenosis, etc.), increase the amount of Pablum or Pabena. To make thinner feeding, as in 3-months infants, increase amount of milk, formula or water.

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BE FED . . . NO LEFTOVER CEREAL TO GO
BACK INTO REFRIGERATOR . . . PABLUM IS
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Virginia

MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

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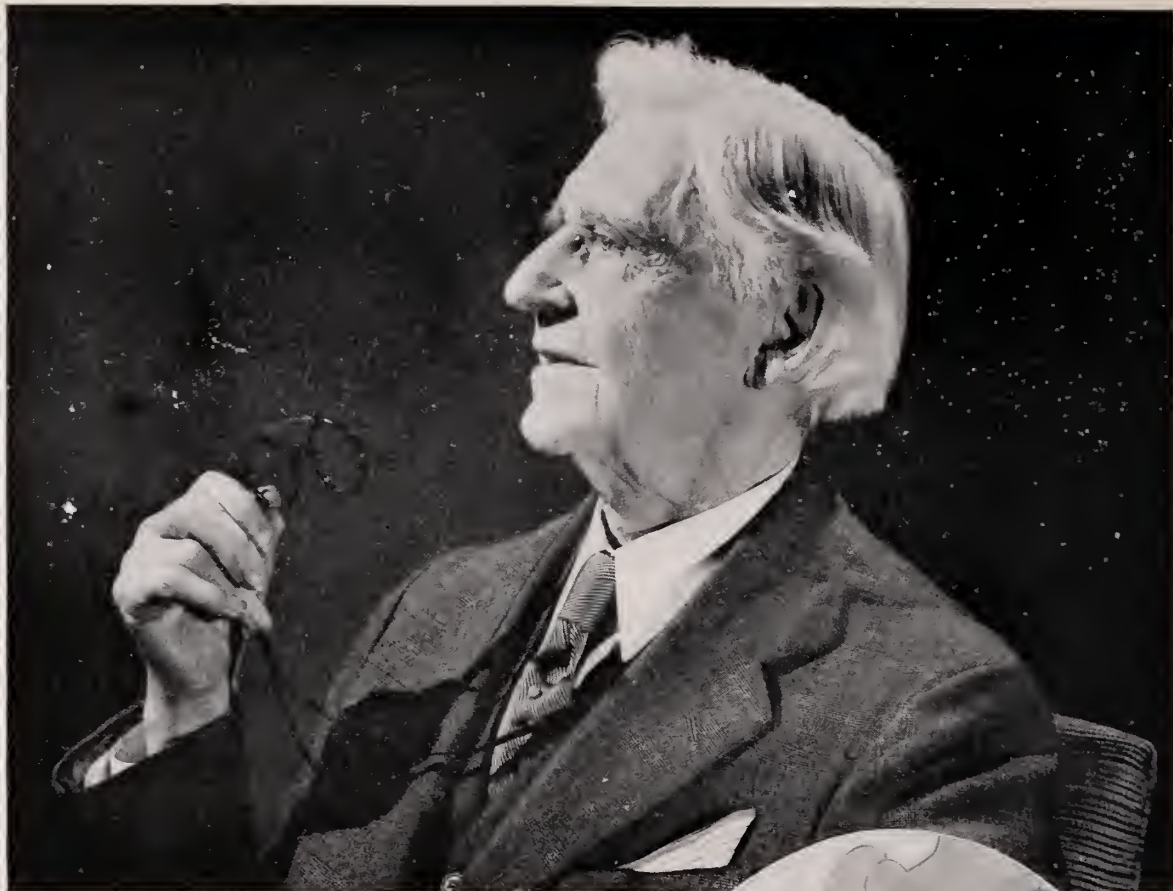
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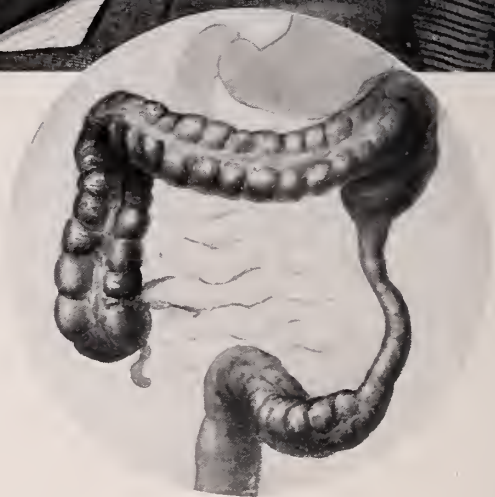


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June 1944



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Old people who eat little and lead quiet, inactive lives tend to become constipated. Restoration and maintenance of "habit time" is of prime importance to the patient's well-being.

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FOR SAFE RETURN TO "HABIT TIME"

Virginia Medical Monthly

Official Publication of the Medical Society of Virginia

Vol. 71, No. 6.
WHOLE No. 1104.

RICHMOND, VA., JUNE, 1944

25 CENTS A COPY
\$2.00 A YEAR

Guest Editorial

Organized Medicine

FIFTEEN years as a member of the House of Delegates and eight years' service to my fellow physicians as a member of the Board of Trustees of the American Medical Association has given me an insight into some of the misunderstandings of the rank and file of the profession as to just what is the relationship of the parent body to State and County Societies.

It appears that the members are not informed as to just what is the function of the national organization. There is frequent criticism of the Board of Trustees and headquarters officers because of a failure to accomplish objectives which individuals think should be undertaken. This applies also to a criticism of the same groups because certain actions are taken.

The whole matter resolves itself into the fact that the individual members are uninformed as to what has been, or is being, accomplished. It seems to me that one of the most important undertakings for any State Medical Journal is to educate the membership as to just what "they" are doing, through the County and State Associations, in the national body.

The Board of Trustees of the American Medical Association includes nine members, two of whom are elected each year to serve for a term of five years. The Board meets regularly in September, November, February and June, and the Executive Committee of the Board meets monthly except for an occasional interval in the summer. By this system of meetings the Board is in constant contact with the headquarters office of the Association and with important changes that occur in relation to medical practice, federal legislation or other phases of life that might affect the American Medical Association.

A study of the annual reports of the Board of Trustees to the House of Delegates will indicate how the Board of Trustees has functioned in relationship to many matters of great importance to the medical profession. It will indicate also how great has been the trust of the House of Delegates in the Board of Trustees. Almost invariably when problems difficult of solution have arisen in the House of Delegates, the House has not hesitated to call on the Board of Trustees for solution and ultimate decision. Never is this done, however, except under a definite directive of the House of Delegates.

The American Medical Association since Pearl Harbor has been confronted with many problems of great importance to the future of American medicine. As an indication of the flexibility of the organization, the following groups have been established and have been functioning actively to meet critical situations:

1. THE WAR PARTICIPATION COMMITTEE. Long before the United States entered the war, the House of Delegates had established a Committee on Medical Preparedness which was concerned with the development of a complete roster of physicians with an indication of their willingness to serve in various capacities in the war effort. When the United States entered the war, this committee gave way to the War Participation

Committee which has met many times both in the headquarters office in Chicago and in Washington, D. C., where it has had contact with such agencies as the Procurement and Assignment Service for Physicians, Dentists and Veterinarians, the War Manpower Commission, the United States Public Health Service, and the Army and Navy Medical Departments. In its relationship to such agencies it has, for instance, established the policy that physicians are not to be sent into areas requiring medical care until there has been a call from the State Procurement and Assignment Service and the state medical society. This committee has been advisory in relationship to problems of medical education, or relocation of doctors to meet war needs, and of many similar problems.

2. THE COMMITTEE ON POSTWAR PLANNING. The minutes of the Committee on Postwar Planning have been published from time to time in *The Journal of the American Medical Association*. This committee has been especially concerned with meeting the needs of the medical profession in the postwar period. Thus there is contemplated a circularization of all doctors with the armed forces so that they may indicate their desires in relationship to the postwar period such as refresher courses, internship, residences, industrial practice, group practice, or other types of medical service.

This committee has been concerned also with meeting the need for graduate education on the part of physicians coming from other countries, especially those in South America. The committee is also concerned with the ultimate disposal of surplus medical supplies and is ready to act in an advisory capacity to various governmental agencies which wish the views of the medical profession on changes in the medical profession in the postwar period.

3. THE COUNCIL ON MEDICAL SERVICE AND PUBLIC RELATIONS. This council was created at the annual session of the House of Delegates in 1943. It has already published an analysis of the Wagner-Murray-Dingell bill and indicated its opposition to that type of legislation. It has also published a statement of policies indicating to some extent the manner in which the committee proposes to function. Arrangements have been made for the gathering of information concerning prospective legislation that may concern the medical profession and for utilization of various agencies in a wide dissemination to the public of the point of view of the medical profession.

4. Many bureaus of the American Medical Association, such as the Bureau of Health Education, the Bureau of Investigation, the Bureau of Legal Medicine and Medical Legislation and the Bureau of Medical Economics, report regularly to the Board of Trustees special problems that may arise in their functioning which have to do with the relationship of such bureaus to other agencies of the American Medical Association or to the medical profession as a whole.

The various Councils of the American Medical Association likewise bring to the Board of Trustees problems of this character.

As a member of the Board, I would pay special tribute to all of the physicians who throughout the years have given so freely of their time and of their service to the work of the American Medical Association, the House of Delegates and the various official bodies but especially to the members of the Board of Trustees who have year after year given unlimitedly of their time and of their thought and of their experience for the advancement of American medicine.

JAMES R. BLOSS,*

Huntington, W. Va.

*Dr. Bloss is Editor Emeritus of *The West Virginia Medical Journal* and a member of the Board of Trustees of the American Medical Association.

A PRELIMINARY REPORT OF THE STUDY OF 200 AUTOPSY CASES AT THE EASTERN STATE HOSPITAL WITH SPECIAL EMPHASIS ON NEUROPATHOLOGY AND BRAIN TUMOR IN OLD AGE*

I. S. ZFASS, M.D.,†
Williamsburg, Virginia,
and
W. RIESE, M.D.,‡
Richmond, Virginia.

A review of the literature for the past twelve years in both this country and in Europe failed to reveal any papers dealing with an analysis of the general pathological findings in autopsies performed in state mental hospitals. There have been a few reports devoted entirely to specific neuropathological findings and especially brain tumors in state hospitals as well as considerable literature with reference to constitutional studies in mental hospitals.

During the five year period 1937-1942, there have been 740 deaths at the Eastern State Hospital. 329 of the cases were autopsied, giving an average autopsy percentage of 45 per cent. The average patient population for the hospital during this period was approximately 1,840 patients.

Our report concerns itself with a preliminary study of 205 of our autopsy cases. In 200 of these cases, complete autopsies were performed, but only brain autopsies were allowed in the other five. The age incidence is given in Table I. It is obvious from this

TABLE I
AGE OF INCIDENCE

Years	No. of Cases
10-20	1
20-30	5
30-40	10
40-50	18
50-60	39
60-70	49
70-80	62
80-90	19
90-100	1
100-110	1
	205

table that this material is virtually geriatric in nature, inasmuch as 65 per cent of the cases were

over 60 years of age at death (83 per cent over 50 years of age).

The clinical diagnoses are given in Table II. Here it is interesting to note that psychoses with

TABLE II
CLINICAL DIAGNOSES

	No. of Cases
PSYCHOSES WITH CEREBRAL ARTERIOSCLEROSIS	46
SENILE PSYCHOSES	43
DEMENTIA PRAECOX	30
MANIC DEPRESSIVE PSYCHOSES	26
PSYCHOSES WITH MENTAL DEFICIENCY	10
PSYCHOSES WITH SYPHILITIC MENINGO-ENCEPHALITIS (PAREISIS)	8
WITHOUT PSYCHOSES	8
PSYCHOSES WITH OTHER SOMATIC DISEASE	7
UNDIAGNOSED PSYCHOSES	5
PSYCHOSES WITH EPIDEMIC ENCEPHALITIS	4
PSYCHOSES WITH OTHER DISTURBANCES OF CIRCULATION	3
INVOLUTIONAL PSYCHOSES	2
PSYCHOSES WITH CONVULSIVE DISORDERS	2
PSYCHOSES WITH OTHER FORMS OF SYPHILIS OF C. N. S.	2
PSYCHOSES ASSOCIATED WITH OTHER BRAIN OR NERVOUS DISEASES	2
PSYCHOSIS WITH OTHER INFECTIOUS DISEASES	1
PSYCHOSIS WITH INTRACRANIAL NEOPLASM	1
PSYCHOSIS WITH PELLAGRA	1
ALZHEIMER'S DISEASE	1
PICK'S DISEASE	1
ALCOHOLIC PSYCHOSIS	1
PSYCHOSIS DUE TO DRUGS	1

cerebral arteriosclerosis and senile psychoses contribute nearly one-half (43 per cent) of the total number of cases. If all of the organic reaction type of mental disorders in this study are added together, it is found that they contribute 70 per cent of the total number of cases. The so-called "functional psychoses", dementia praecox, and manic depressive psychosis make up only 27 per cent of the group. The incidence of the first ten psychoses given here in their order of frequency is very similar to the list recently compiled by Dayton¹ of first admissions to the Massachusetts Mental Hospitals when the admission rates are based on the age groups of the

*Read at meeting of Neuropsychiatric Society of Virginia, Richmond, February 16, 1943.

†Awarded first prize given by the State Hospital Board for research in the Virginia State Mental Hospitals.

‡From the Eastern State Hospital, Williamsburg, and the Medical College of Virginia, Richmond.

‡From the Medical College of Virginia Richmond.

population in which a given psychosis places 90 per cent or more of admissions. In this way the previously high incidence psychoses, dementia praecox and manic depressive psychosis, that is, when the figures are based on the total population, or all age groups, are now moved down to third and fourth places. When thus compared, there is a suggestive correlation between admission rates and mortality rates although it is realized that our group of cases is too small for these findings to be truly significant.

In Table III, the anatomical diagnoses (with the exception of neuropathological findings, are listed

TABLE III
ANATOMICAL DIAGNOSES

	No. of Diagnoses
BRONCHOPNEUMONIA -----	85
DIFFUSE SCARRING OF KIDNEYS -----	67
MYOCARDIAL SCARRING -----	64
MYOCARDIAL HYPERTROPHY -----	54
MODERATE AND SEVERE ARTERIOSCLEROTIC CHANGES OF AORTA -----	48
CORONARY SCLEROSIS -----	44
CYSTIC CHANGES OF KIDNEYS -----	33
CHOLELITHIASIS -----	27
PULMONARY TUBERCULOSIS WITH CAVITATION -----	23
PLEURAL EFFUSION -----	21
CIRRHOSIS OF LIVER -----	18
CORONARY OCCLUSION -----	17
PULMONARY EDEMA -----	15
PULMONARY CONGESTION -----	15
CYSTIC CHANGES OF THYROID GLAND -----	14
PROSTATIC HYPERTROPHY -----	14
DIVERTICULA OF LARGE INTESTINES -----	14
VALVULAR HEART DISEASE -----	13
ACTIVE PULMONARY TUBERCULOSIS WITHOUT CAVITA- TION -----	12
ULCERATION OF LARGE INTESTINES -----	12
ULCERATION OF SMALL INTESTINES -----	12
PULMONARY INFARCTION -----	11
CONGESTION OF LIVER -----	11
DIVERTICULA OF SMALL INTESTINES -----	11
NODULAR THYROID GLAND -----	10
DECUBITUS ULCERS -----	10

in their order of frequency. In this table only those lesions which were reported ten times or more are included. For the purpose of this report, only descriptive terms are used and no attempt has been made to subclassify the lesions in more detail. Bronchopneumonia was the terminal event in 85 instances. This was the most frequent lesion and reasonably so, inasmuch as the majority of mental diseases involved were chronic, progressive and debilitating processes such as occur especially in old individuals. It is also interesting to note that, with

the exception of bronchopneumonia and some of the acute pulmonary edemas the lesions listed in Table III are all chronic processes. The high figures for cardiac, renal, and vascular lesions might justify the popular use of the all inclusive term "cardio-vascular-renal disease" for many such cases.

In Table IV the lesions which occurred less than ten times each are recorded. Here it is seen that

TABLE IV
ANATOMICAL DIAGNOSES

	No. of Diagnoses
RECENT MYOCARDIAL INFARCTION -----	9
ATROPHY OF TESTICLES -----	9
LOBAR PNEUMONIA -----	8
FIBROUS PLEURISY -----	8
PERICARDIAL EFFUSION -----	8
COLITIS -----	8
PERITONITIS -----	8
FIBROMYOMATA OF UTERUS -----	8
MEDULLARY DEGENERATION OF ADRENALS -----	8
PULMONARY ATELECTASIS -----	7
ASPIRATION OF FOREIGN MATERIAL IN LUNGS -----	7
HYPERTROPHY OF THYROID GLAND -----	6
OTHERS—Each occurring five times or less:	
Pulmonary abscess	Metastatic malignancy of liver
Pulmonary embolism	Empyema
Uterine malignancy	Pericarditis
Ovarian malignancy	Hemopericardium
Gastric tuberculoma	Rupture of myocardium
Fibrosarcoma of pectoral muscle	Syphilitic aortitis
Carcinoma of skin	Aneurysm of aorta
Cystitis	Rupture of aortic aneurysm
Ruptured esophageal varix	Rupture of aorta
Gastric ulcers	Tuberculosis of spleen
Perforated gastric ulcer	Tuberculosis of adrenals
Meckel's diverticulum	Renal infarction
Tuberculous peritonitis	Hydronephrosis
Gastric polyps	Pyelonephritis
Tuberculous pneumonia	Renal Tuberculosis
Suppurative pyelophlebitis	Papilloma of bladder

lobar pneumonia occurred only eight times. The acute lesions with subsequent sudden death were very infrequent. Again, the low figures for these processes would be expected in the light of the age incidence of our material. The number of malignant tumors reported are small and most malignancies occurred only one time each. It is remarkable to note that gastric carcinoma did not occur in this series. Metastatic malignancy of the liver occurred three times.

In anticipation of the utilization of the autopsy material for studies in constitution, each autopsy was very carefully and completely performed with rather detailed protocols. Unless exact measurements and

weights of organs are recorded, studies in constitution would be fruitless. In this preliminary report, we do not wish to present in any detail the constitutional implications of this series of cases, but it might be of some interest to illustrate by a table of heart weights an example of some of the constitutional tendencies. Lewis^{2,3,4} has for many years been studying in great detail the anatomical findings in

noid dementia praecox and manic depressive psychoses.

In the regressive group, one finds, among other pathological changes, a hypoplasia of the circulatory system with a small heart and a small thin aorta, as contrasted with the compensatory findings of a large hypertrophied heart and arteriosclerotic changes in the hypercompensatory or progressive group. Table

TABLE V

Heart Weights—Grams				Heart Weights—Grams			
Name Males	D.P. Heb.-Cat.	D.P. Paranoid	Manic Depressive	Name Females	D.P. Heb.-Cat.	D.P. Paranoid	Manic Depressive
H.S.B.		330		N.L.B.			340
O.B.	300			D.B.		540	
A.B.		390		E.E.D.			600
H.E.C.		300		D.A.E.			520
W.E.C.	200			R.V.E.		200	
A.P.F.		360		A.E.	280		
R.H.			320	M.J.F.			400
R.H.P.			440	V.M.G.	160		
V.J.R.		520		M.M.		360	
L.S.R.			380	S.P.			500
R.F.S.			350	E.M.P.	180		
L.E.T.			360	N.S.	280		
P.G.W.		540		J.L.S.	108		
S.M.W.		370		O.J.W.	320		
F.J.H.			560	C.B.H.	240		
E.M.M.		350		N.P.			340
W.J.R.	240			C.W.		500	
A.L.W.			460	E.D.	300		
J.A.B.			600	R.M.	240		
J.W.I.		540		M.B.			220
A.K.			440	B.S.	240		
E.N.P.			310				
W.L.G.	300						
C.A.S.		680					
J.T.	260						
W.R.W.	275						

dementia praecox and paranoid developments as well as in the manic depressive group of psychoses. He has been able to show that if the dementia praecox group is separated into a nuclear and peripheral type, that is, if the hebephrenic-catatonic types are separated from the paranoid types, a striking correlation exists between morphological findings and mental mechanisms. He has postulated two large groups, a regressive group and a hypercompensatory or progressive group. In the regressive group have been placed the hebephrenic and catatonic dementia praecox and in the hypercompensatory or progressive group the paranoid developments, including para-

V and V-a illustrates this variation in heart weights. If 300 grams is taken as the average heart weight, one notices that most of the weights given for the hebephrenic-catatonic dementia praecox group fall below this figure and the weights given for the paranoid dementia praecox and manic depressive group are higher than this figure. Lewis⁴ reported a degree of vascular hypoplasia and some widening of lymph channels in 85 per cent of the hebephrenic-catatonic form of psychoses. More detailed analysis of our material with reference to constitution will be reported in future communications.

In Table VI the neuropathological findings are

TABLE V-A
A PRELIMINARY STUDY IN CONSTITUTION

Mental Diagnosis	Regressive Group*	Hypercompensatory (Progressive) Group*	
	Hebephrenic—Catatonic	Dementia Praecox Paranoid	Manic Depressive Psychosis
No. of Cases (Male and Female)	16	14	17
Average Heart Weight (grams of the above cases.)	248 grams	419 grams	420 grams
Average Heart Weight in normal individuals (after Roessle and Roulett) Male --- 316 Average Female -- 270 293 grams	293 grams	293 grams	293 grams
Difference between average weight of hearts in above cases and normal individual	-47	+116	+117

*Classification of N.D.C. Lewis

presented. In biology, tables and statistics have their weak points and so have our tables. It is obvious that the classification of neuropathological findings

TABLE VI
NEUROPATHOLOGICAL FINDINGS

TYPES OF LESION	Es-SEN- TIAL	ACCOM- PANY- ING	TOTAL
ARTERIOSCLEROSIS OF BASAL VESSELS (DILATATION, RIGIDITY, TORTUOSITY, CALCIFICATION, PLAQUES, THICKENING)	22	99	121
ENLARGEMENT OF THE VENTRICULAR SYSTEM, HYDROCEPHALUS INTERNUS	9	95	104
CONVOLUTIONAL ATROPHY	64	38	102
SOFTENING	54	23	77
FIBROSIS OF PIA MATER	4	59	63
ENLARGEMENT OF PERIVASCULAR SPACES, LACUNAR STATE, CRIBIFORM STATE	9	42	51
DEGENERATION OF CHOROID PLEXUS	7	33	40
CONGESTION OF PIA MATER	1	14	15
CEREBRAL HEMORRHAGE	7	4	11
OTHERS	4	6	10
NO LESIONS	—	—	9
NEOPLASM	8	2	10
ASYMMETRY OF HEMISPHERES (SIZE CONVOLUTIONAL PATTERN)	1	5	6
CEREBELLAR HEMORRHAGE	1	1	2
MEGALOENCEPHALY	3	—	3
PACHYMENINGITIS HEMORRHAGICA INTERNA	1	2	3
SUBDURAL HEMORRHAGE	—	2	2
STATUS VERRUCOSUS, SCHIZOGYRY	3	—	3
PACHYMENINGITIS OSSIFICANS	—	2	2
SUBARACHNOID HEMORRHAGE	—	1	1

according to their "essential" or "accompanying" character implied an arbitrary factor. This factor is always involved when a decision must be made with regard to the role a given lesion may play in the entire pathological picture. This arbitrary factor cannot be avoided. In the very few instances in which only a single neuropathological finding was present, this single finding was classified as "essential". We tried to use as many descriptive terms as possible. We feel that it is the primary task of the psychiatrist or neuropathologist dissecting a brain to give a pure description of what he sees. (However, a preliminary "impression" of the nature of the lesions found and an attempt to correlate the neuropathological findings with the clinical picture was made in every case.) The neuropathological report will thus never lose its value and will never be invalidated by further microscopical examinations. Although the various neuropathological findings listed in Table VI may occur in all age groups, by far the most frequent lesions reported are those found in senile brains. The number of cases wrongly contributing to this impression is extremely small as proven by microscopical studies.

There were only 9 cases among 205 in which no lesions could be seen. The usefulness of neuropathology in State Hospitals cannot be illustrated in a more eloquent manner.

The table of the neuropathological findings is again the exact counterpart of the table of age inci-

dence. Indeed, the highest figure of neuropathological findings occurs in arteriosclerotic changes of the cerebral vessels, enlargement of the ventricular system, hydrocephalus internus, convolutional atrophy, and fibrosis of the pia mater. These various lesions represent the main components of the aged brain. In this respect, the high percentage of degeneration of choroid plexus should be noted.

The relatively small number of cerebral hemorrhages is interesting, especially when compared with the high figure of vascular disorders on arteriosclerotic basis and the relatively large number of softenings. The latter fact is in conformity with recent statements made by D. Rothschild.⁵

In spite of the fact that the various components of the senile brain are the most frequent findings, there are numerous other lesions which could have been found in material of any age and which thus leads to the conclusion, that *old age, although it usually gives rise to an "old" brain, may show any conceivable lesion.* In this respect, the high figure of neoplasms (4.9 per cent) is very remarkable. This figure is not much lower than that noted for cerebral hemorrhages, which are generally considered as characteristic of old age.

Other reports of the incidence of brain tumors occurring in autopsies performed in state mental hospitals vary from .3 per cent to 3.4 per cent (Davidoff and Ferraro⁶, and J. L. Hoffman⁷). Larson⁸ reported an incidence of 13.5 per cent intracranial tumors in 229 autopsies performed at Western Washington State Hospital. His figures, however, are exceptionally high and he included cerebral aneurysm in the category of brain tumor.

Special attention has been given to our tumor group. There were 10 neoplasms among 205 autopsies. Seven of these neoplasms occurred in patients past fifty. Four of the seven cases were 64, 70, 71, 76 years, respectively.

Histopathological examination revealed:

- 3 glioblastoma multiforme
- 3 tuberculomas
- 1 spongioneuroblastoma
- 1 meningioma
- 1 adenoma of the pituitary (chromophobe)
- 1 unclassified tumor

There can be no doubt that tumor research in old age faces problems of great importance and general interest. This conclusion may also be drawn from previous investigations, the number of which is ex-

tremely small (Moersch, McK. Craig and Kernohan⁹, Moore¹⁰, McIntyre and McIntyre¹¹). By an individual analysis of 3 instructive cases we intend to display the problems involved rather than to solve them.

Case I (A.B.). The patient, a male schizophrenic, was in the Eastern State Hospital for 28 years; at the age of 57, he suddenly fell. Following this fall numerous symptoms were noted, such as unsteady gait, general increased incoordination, slight generalized tremor, convulsive seizures of Jacksonian character suggesting a lesion of the left hemisphere, slight right facial weakness, paralysis of the right arm and leg, absence of abdominal and cremasteric reflexes. Disc margins on right were very indistinct with hemorrhagic areas at superior nasal margin of disc. About 12 days after the onset of these symp-

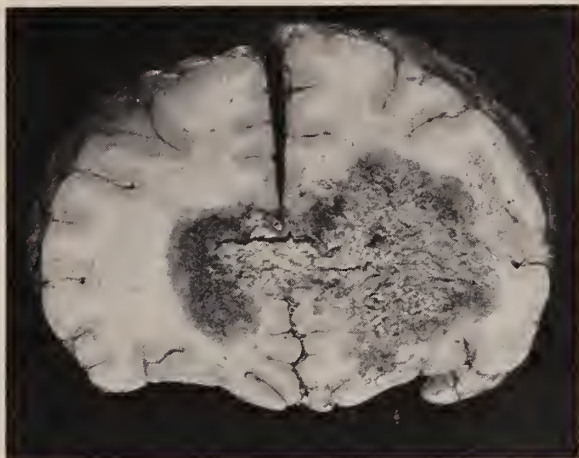


Fig. 1. Glioblastoma Multiforme—Gross Appearance.

toms the patient died. Neuropathological examination (Fig. 1) revealed a bilateral glioblastoma multiforme affecting both hemispheres, but predominantly the left one and involving the centrum ovale, anterior and superior regions of the striatum, internal capsule, corpus callosum, and reaching as far backward as the posterior horns of the lateral ventricles, but sparing the cortex.

Case II (R.N.). At the age of 64, this male patient began to lose his memory, acted foolishly and flightily, wandered around the country and was unable to find his way home. He became easily excited and more and more helpless. The clinical picture was that of a senile psychosis and of a slow and progressive mental deterioration. There were no strokes. Duration of clinical symptoms: 3 years.

Neuropathological examination revealed a spongioneuroblastoma (Fig 2) involving the right frontal and parietal lobes, the white matter, striatum and internal capsule, but the cortex only to a small extent. The anterior regions of the neoplasm were hemorrhagic in character and encapsulated, the posterior regions affecting an infiltrative mode of growth.

Case III (W.E.A.). The patient was 71 years of age at the time of his admission to the Eastern State Hospital. He had not worked for the past two years because of general enfeeblement as a result of old age. About two months before admission the patient was suddenly taken ill with an attack of unconsciousness. According to his son, the patient had been gradually deteriorating since that time. He had been difficult to handle, mildly violent, refused to keep clothed and attempted to leave the house and wander about on many occasions and there was definite irra-

transformed into hemorrhagic cysts, others appeared to be softened. The constituent tumor cell was similar to an unripened nerve cell (Fig. 5).*

The following preliminary conclusions may be drawn from these (and similar) cases:

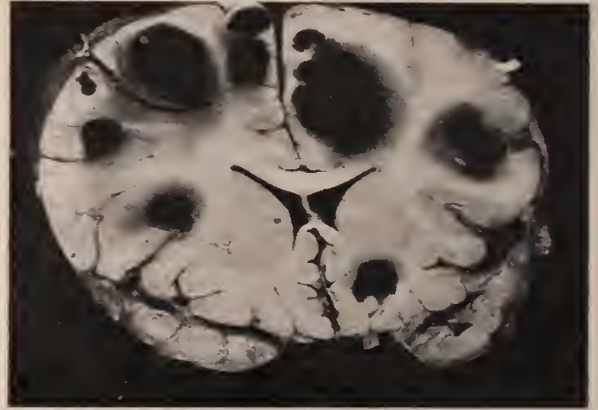


Fig. 3. Gross Appearance of Disseminated Tumor.

1. *In an aged patient the clinical history of objective tumor symptoms may be unusually short, in spite of the fact that at the time of the onset of tumor symptoms the growth may be very extensive or even disseminated and not at all limited to a so-called silent area.* (The clinical history in case I was 12 days; 2 months in case III. The average survival

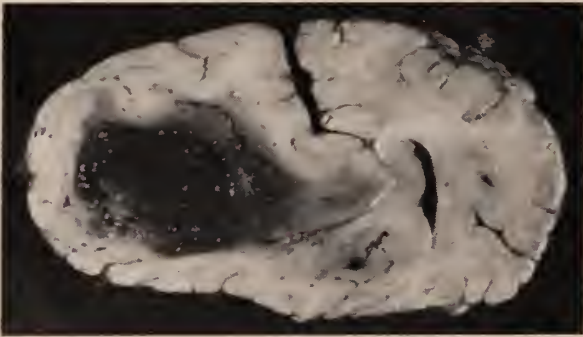


Fig. 2. Spongioneuroblastoma—Gross Appearance.

tional conduct and memory loss. Because the patient seemed to be getting worse, refused to take nourishment and was apparently paralyzed on the right side, he was taken to a Richmond Hospital where a diagnosis of cerebral vascular accident and cerebral thrombosis was made. He was later committed to the Eastern State Hospital. Neurological examination at the Eastern State Hospital revealed generalized rigidities, generalized fibrillary twitchings of the muscles, generalized hyperflexia and bilateral ankle clonus. He died 10 days after admission. Neuropathological examination (Fig. 3) revealed a very extensive, unusual (unclassified disseminated tumor, involving both hemispheres and the cerebellum. The various nodules were of different sizes and ages, they involved both the white and underlying gray matter and were placed more in the periphery than in the center (Fig. 4). Several tumors had been



Fig. 4. Gross Appearance of Disseminated Tumor Showing Peripheral Distribution of Nodules.

period in a similar group reported by Davidoff and Ferraro was 9.1 months.) Thus, the aged brain does not always react to a new pathological condition in the same way as a young brain, the reaction type of the aged brain being less violent and slower.

*This case has been studied completely and will be published in the *American Journal of Psychiatry*.

2. *The number of classical tumor symptoms may be small or even entirely lacking in an old brain.* The diagnosis of brain tumor in old age is therefore an even more difficult task than in earlier life periods. The relative frequency of unsuspected neo-

must be written not only in terms of structural elements but also in terms of life periods.

We intend to report more completely our studies of the problems of brain tumor in old age in psychiatric patients in the near future.

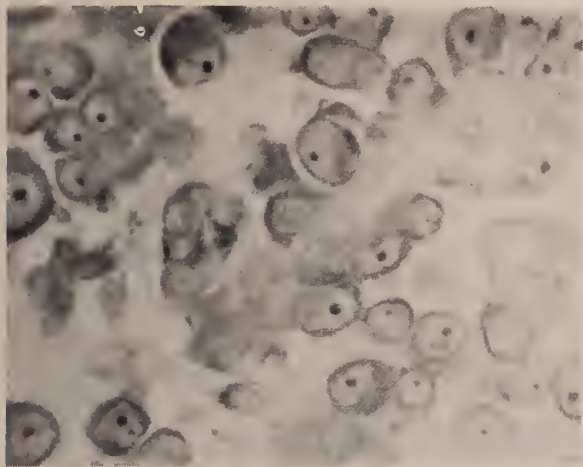


Fig. 5. Cellular Structure of the Constituent Elements of a Nodule. Nissl X450.

plasms in old people makes it important to attempt to rule out brain tumor in each case, although this is frequently impossible.

3. *The symptomatology of brain tumor in old age may lose much of its specific character* and become similar to other neurological or psychotic conditions of the same life period, such as vascular accidents, psychosis with cerebral arteriosclerosis, or senile dementia. It seems that the *various life periods have their own physiological and pathological reaction types* and that an old brain has the tendency of reacting in its own way whatever the pathological condition may be. Generally speaking, *neuropathology*

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Student Enrollments in Nursing Schools.

A total of 112,249 student nurses were enrolled in the 1,307 state accredited schools of nursing in the country on January 1, 1944, an increase of nearly 12,000 over the number enrolled in 1943 and more than 20,000 over 1942, according to a study just completed by the Department of Studies of the

National League of Nursing Education and reported in the May 1944 *American Journal of Nursing*.

Although the number of state accredited nursing schools has decreased from 1,472 in 1935 to 1,307 in 1944, the size of the average school has steadily grown. In 1935 the average school had 48 students; in 1944 it has 86, an increase of 79 per cent.

FEMORAL VEIN LIGATION IN THE TREATMENT OF PULMONARY EMBOLISM DUE TO FEMORAL THROMBOPHLEBITIS*

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Pulmonary embolism is an all too frequent cause of dramatic and sudden death in both medical and surgical patients. In practically all instances, the cause is thrombophlebitis in the lower extremity. Recently, from Boston, there has been published a series of articles claiming that thrombophlebitis in the lower extremities is initiated in about 85 per cent of cases below the profunda femoris and usually in the deep veins of the calf, and that pulmonary embolism can and should be prevented in such instances by ligation of the femoral vein, proximal to the thrombophlebitic process. It is the purpose of this paper to emphasize these conceptions and to report my experiences with femoral ligation in three cases. Technical details as learned from these three cases and from cadaver dissection are also described.

For many years, masterful inactivity has been the keynote of the therapy of thrombophlebitis. We apply hot compresses and an electric cradle, order all concerned to move the patient's extremity as little as possible and pray that embolism will not occur. Treatment of the ilio-femoral variety has been improved by the early employment of paravertebral lumbar sympathetic block. Pain is immediately relieved, the swelling rapidly disappears, and the fever quickly subsides. Spinal or caudal anesthesia has the same effect and already favorable reports are coming out on the use of continuous caudal anesthesia instead of paravertebral block. Heparin and dicoumarin have also been added to our armamentarium for the therapy of thrombophlebitis. Their value has not been definitely established at this writing. An outstanding fact is that these more modern methods of treatment have not lessened the incidence of pulmonary embolism.

I shall not attempt to review the impressive literature that tends to substantiate the claim of the Boston men, that thrombophlebitis in the femoral vein is usually initiated in the deep veins of the calf. Once one becomes cognizant of the fact that the calf, and not the groin, is the usual site of origin

of lower leg thrombophlebitis, and is on the alert for the process clinically, the syndrome will be encountered with remarkable frequency. There is an insidious onset with a slight rise in temperature and pain in the leg usually in the calf region, occasionally in the heel or sole of the foot. The pain may be so slight that it is not mentioned by the patient until specifically questioned about it. Almost invariably there is tenderness of the calf muscles and forceful dorsi-flexion of the foot causes pain in the calf or popliteal region—"Homans' sign". There may be slight edema of the lower leg, increased local heat, fulness of the superficial veins, slight cyanosis, elevated sedimentation rate. In the average case, the process subsides in several days. In some instances, pain develops in the groin, indicating extension of the phlebitis to the femoral or iliac vein. On the other hand, the first warning that thrombophlebitis exists may be the sudden occurrence of pulmonary embolism.

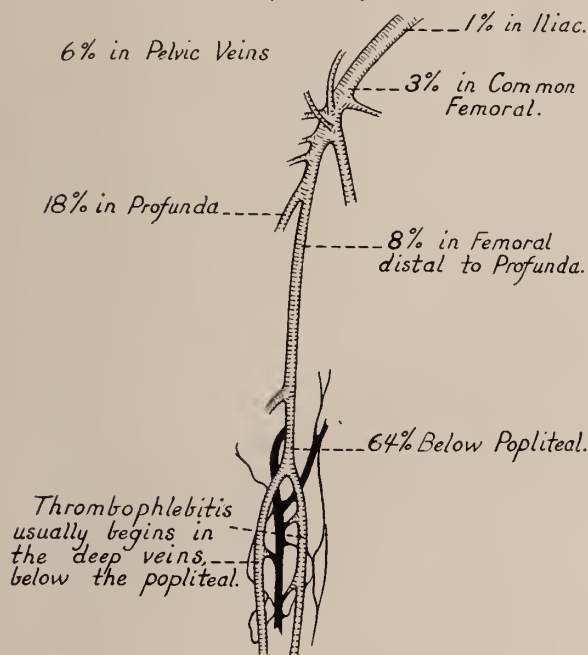
According to Fine *et al*, approximately one out of every seventeen to twenty persons with clinically recognizable thrombophlebitis of the deep veins of the lower extremity will die of embolism. Likewise, one person of every six to twelve who have survived one or more attacks of pulmonary embolism, will die of a subsequent embolus. In patients over fifty years of age, have deep thrombophlebitis, Welch *et al* had a death rate of 8 per cent from massive pulmonary infarction. In a statistical study of eight hundred and ninety-nine cases of fatal and non-fatal embolism, Barker *et al* reached the conclusion that, if all fatal embolisms which were preceded by a clinically diagnosed non-fatal embolism could be prevented, the total number of fatal embolisms would be reduced by one-third.

It is apparent that disastrous consequences are to be expected from failure to intervene when thrombosis in the deep veins of the lower leg is known to exist and that even if operative intervention is limited to those cases in which an embolism has already occurred, the death rate may be reduced by one-third.

*Read before the annual meeting of the Medical Society of Virginia, at Roanoke, October 25-27, 1943.

Homans was the first to recommend ligation and division of the femoral vein proximal to the thrombophlebitic process to prevent pulmonary embolism. Other Bostonians, Fine and Sears, Fine, Frank and Starr, of the Department of Surgery, Beth Israel

133 Cases of Venous Thrombosis (Frykholm, quoted by Fine & Sears)



Hospital and Harvard Medical School, and Welch, Faxon and McGahey of the Massachusetts General Hospital have further explored the problems involved, and practiced the procedure extensively.

Venography, as introduced by Dos Santos in 1938, and applied to the thromboembolic problem by Bauer, has been of material aid to those interested in the prevention of pulmonary embolism. Bauer obtained his venograms by injecting the radio-opaque solution into a terminal branch of the lesser saphenous, cutting down on the vein just behind the external malleolus. The Boston group has employed a simpler method: 25 cubic centimeters of diatrast are injected into one of the dorsal veins of the foot or the distal end of the long saphenous, while return of blood through the long saphenous is prevented by a blood pressure cuff applied around the calf and inflated to 20 to 40 millimeters of mercury pressure. All of the injected diatrast is thus shunted through the perforating veins into the deep venous system. The patient's heel is elevated on a four

inch block and the leg is rotated inward 10° to 15° to secure the widest gap between the tibia and fibula. Sixty seconds are used to inject the solution, and immediate x-ray exposures are made, using soft tissue technique. A normal venogram will show numerous branches in the lower leg, the anterior and posterior tibial and peroneal, the popliteal and the femoral veins. A variation of the above technique is the injection of the contrast solution into the long saphenous in the thigh. The upper femoral and the iliac veins are visualized if the thrombotic process has not extended up to this level.

The status of venography in thrombophlebitis has not been entirely settled. The contrast media has occasionally aggravated the inflammatory process. Certainly, in the absence of clinical evidence of the origin of the clot, a venogram should be made if pulmonary embolism has occurred, for a latent thrombophlebitic process may only thus be diagnosed. Likewise, if surgical intervention has been decided upon, the venogram will demonstrate the upper limit of the thrombosis and indicate where ligation must be performed to be ahead of the process.

According to Welch *et al*, the femoral vein is ligated in any case of deep thrombophlebitis, if the patient is forty years of age or over, or if he is under forty and has a bland thrombosis, or has had a pulmonary embolism. Welch's report includes over

Diagnosis of Thrombophlebitis of Deep Veins Below Knee

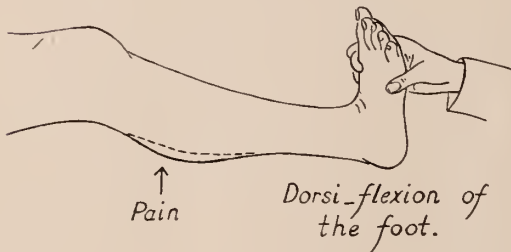


Tenderness of calf muscles.

one hundred phlebograms and eighty-two femoral vein ligations for deep venous thrombosis. It is the policy of Fine, Frank *et al* always to divide the femoral vein if signs and symptoms of thrombophlebitis in the lower leg exist, or if a filling defect is

demonstrable in the venogram. These authors feel that routine division of the common femoral vein is the procedure of choice, and state, further, that deliberate failure to do so in any given instance is equivalent to deliberate acceptance of the risk of

*Diagnosis of Thrombophlebitis
of Deep Veins Below Knee
(Homans' Test)*



embolism, in preference to the risk of division of the common femoral vein.

If the thrombotic process has extended to the upper part of the common femoral or into the iliac vein, a retroperitoneal abdominal operation is required. Routine surgical interference has not been recommended in such cases, as the risk involved may be greater than warranted. However, should pulmonary embolism occur, there should be no hesitancy in ligating the external or the common iliac and, according to Homans, this procedure will cause even less interference with the venous circulation than ligation lower down, due to better collateral circulation.

The Boston surgeons carried out their policy of routine femoral vein ligation in cases of deep venous thrombosis of the legs that occurred in victims of the Cocoanut Grove fire disaster. Moore, of Massachusetts General Hospital, has reported four of these cases. Pulmonary infarction had preceded the femoral ligation in two of the cases reported.

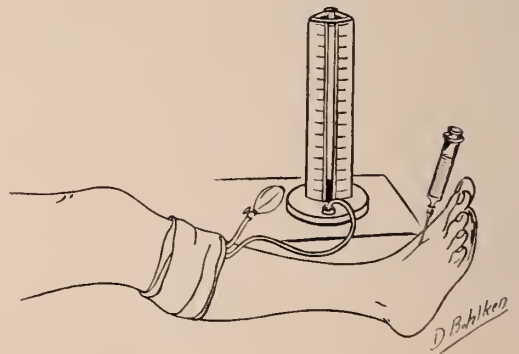
Before presenting my own cases of femoral vein ligation for the prevention of pulmonary embolism, I shall describe two instances in which ligation was not performed—with fatal consequences.

Case I.—B. M., Norfolk General Hospital, No. 7128, age 28, had a supravaginal hysterectomy and right salpingo-oophorectomy on August 28, 1942. On the twelfth postoperative day, the patient suddenly complained of pain in the left chest, worse

on breathing. A roentgenogram taken the same day showed patchy areas of consolidation in the left lung which were interpreted as multiple small emboli. There were no signs of thrombophlebitis in either groin and the pelvic veins were thought to be the source of the emboli. Three days later, the typical findings of ilio-femoral thrombosis were present. Emboli continued to occur and the patient's condition became critical. Heparin therapy was instituted and was maintained until the patient's sudden death from another embolic episode three days later. At autopsy, the left iliac vein contained a grayish-white and reddish clot which extended almost to the vena cava. The clot could be traced down the femoral wall into the lower thigh. The right femoral and pelvic veins were normal. The lungs showed multiple areas of pulmonary infarction.

Comment: Pulmonary embolism in this case was the first indication that thrombophlebitis existed. It is to be presumed that if we had been familiar with the syndrome of lower leg thrombophlebitis and had examined the calf region properly, evidence of thrombophlebitis in the deep veins of the calf would have been apparent several days before the typical signs of "milk leg" developed. Certainly, in light of our present knowledge, venograms of the lower extremities should have been taken as an

Technique of Venography



25 C.C. of Diatrast injected.

emergency procedure as soon as evidence of pulmonary embolism existed. Heparin might have been expected to prevent further thrombosis, but it could not and did not prevent the breaking loose of clots and repeated embolic episodes. Iliac vein liga-

tion would have been hazardous, as the patient was very ill, but it probably could have been performed and the patient's life might have been saved if we had been more courageous.

Case II.—G. A., Norfolk General Hospital, No. 7201, a forty-three year old woman, had a supravaginal hysterectomy and left salpingo-oophorectomy performed for a fibroid uterus and pyosalpinx. On the ninth postoperative day, a rise of temperature occurred and physical signs interpreted as those of bilateral bronchopneumonia were noted. Three days later, a patch of thrombophlebitis was observed in a small superficial vein, on the inner surface of the lower leg. That afternoon the patient suddenly died, evidently of pulmonary embolism.

Comment: It is now known that deep vein thrombophlebitis often coexists with a superficial thrombophlebitis. The source of the thrombus was probably a process in the deep veins of the calf. A superficial thrombophlebitis, certainly in a non-varicose vein, calls for a venogram of the deep venous system.

Case III.—P. H., Norfolk General Hospital, No. 9674, a twenty-six year old man, had a left nephrectomy performed November 20, 1942, for pyonephrosis. On the seventh postoperative day, the patient complained of pain in the calf of the right leg and to a lesser extent in the right groin. The temperature rose to 102° F. and the pulse rate to 100. There was tenderness in the calf and groin and Homans' sign was positive. A diagnosis of thrombophlebitis of the deep veins of the calf with upward extension was made. Routine management was ordered plus the immersion of both arms in hot water for an hour three times a day. I have often used this procedure effectively when lumbar sympathetic block is refused, obtaining similar though less pronounced vasodilatation in the lower extremities. The patient improved progressively and he was discharged from the hospital December 12, fifteen days after the onset of his thrombophlebitis, with normal temperature, pulse and sedimentation rate. During his second night at home, the patient was taken suddenly with sharp pains in his right chest behind his shoulder, marked shortness of breath, cough and hemoptysis. He was rehospitalized, placed in an oxygen tent and given sulfadiazine to prevent infection in the infarcted area. Although all signs of thrombophlebitis in the right leg

had disappeared, and the left leg was entirely negative, exploration of the right femoral vein was thought advisable and was proposed to the patient. This, the patient refused in spite of a careful explanation of the risk he accepted of having further emboli. The lung signs rapidly cleared, and, on December 24, the patient again left the hospital, having given no evidence of further emboli or of active thrombophlebitis in either lower extremity. On January 7, 1943, two weeks after his last discharge from the hospital, and forty-one days after the onset of his "milk leg", the patient again was taken suddenly with right chest pain and dyspnea. He was again hospitalized, with clinical signs of pulmonary embolism and this time he consented to a femoral vein ligation provided an "x-ray" showed it necessary. A venogram, taken by the method previously described, was reported as follows: "Marked filling defects in the femoral vein. The defects do not extend as high as the foramen ovalis. The findings are consistent with thrombosis of the femoral vein. As best I can tell, the superficial and profunda veins are unobstructed."

Operation was performed on January 14, 1943, under local anesthesia through a vertical incision beginning just below the crease in the groin. With the pulsation of the femoral artery as a guide, the dissection was deepened through Camper's fascia and the fascia lata to the vascular sheath. The sheath was opened just over the artery and then over the vein, which was found on the inner side of the artery. The femoral vein was freed within the sheath, from just below the femoro-saphenous junction to beyond the entrance of the profunda femoris. This branch entered the femoral directly posteriorly. It seemed entirely normal as did the femoral just below it. A nick in the femoral resulted in the free flow of blood, further indicating its freedom from thrombosis at this level. Accordingly, the femoral was divided between double ligatures of chromic catgut No. 2 just below the entrance of the profunda. The saphenous vein, which had been traumatized during the dissection, was likewise ligated and divided.

Convalescence from this operation was unusually smooth and the patient left the hospital on the sixth postoperative day. He experienced no further setbacks and has been working hard as a machinist. There is a tendency to moderate swelling of the

right leg, which he controls with an elastic bandage.

Comment: Recalling Fine's statement that one person of every six to twelve who have survived one or more attacks of pulmonary embolism will die of a subsequent embolus, femoral vein ligation in this case certainly was indicated and may have been life-saving. The findings at operation bore out the venography findings that the profunda femoris and common femoral were normal and that the lower femoral was the site of origin of the emboli.

Case IV.—A. R., Norfolk General Hospital, No. 4697, age thirty-five, had a supravaginal hysterectomy and right salpingo-oophorectomy performed on June 4, 1943. On the tenth postoperative day, a slight elevation of temperature occurred. Two days later, the patient complained of pain in the left lower leg and lower thigh. The left lower leg was slightly swollen, the calf was tender and Homans' sign was positive. A venogram on June 16 was reported as follows: "The superficial system is well-filled. The point of juncture of the saphenous with the femoral is well demonstrated and there is considerable reflux into the femoral and femoral profunda. Neither the tibial nor the peroneal is filled. The findings are consistent with obstruction of the deep venous system of the lower leg." On June 19, the day following paravertebral novocaine injection of the lumbar sympathetic for increasing pain in the leg incident to the taking of the venogram, the patient experienced sudden pain in the left chest, dyspnea, and cough. The clinical findings were those of pulmonary embolism, and femoral vein ligation was performed as an emergency procedure.

Spinal anesthesia was used and a "T" shaped incision was made, with the horizontal limb parallel and just below the crease in the groin and the vertical portion over the femoral artery pulsation. The saphenous vein was retracted and the fascia lata incised. The femoral sheath was found with difficulty and after considerable loss of time, as no femoral pulsation could be detected in the operative area. When the vascular bundle was found and the sheath was opened, a contracted and non-pulsatile femoral artery was found resting squarely in front of the enlarged and thrombosed femoral vein. The artery was with difficulty dissected from the vein, and thereafter was observed to have a faint but definite pulsation. With the femoral artery retracted laterally, the femoral vein was freed within its sheath

up to the femoro-saphenous point. Dissection was then begun of the common femoral above the femoro-saphenous junction. The femoral was obviously thrombosed throughout the entire extent of the dissection, both below and above the saphenous. As it thus was impossible to get above the thrombotic process without a laparotomy, the femoral vein was divided between double ligatures just below the saphenous junction. A red clot partially occluded the lumen of the divided vein. The wound was closed with a few interrupted stitches in the fascia lata and a continuous dermal suture in the skin. As in the preceding case, the postoperative course was smooth. Swelling of the leg disappeared even more quickly than was to be expected, and the patient left the hospital eleven days after her femoral vein ligation, having been ambulatory for several days.

Comment: It was my impression that the venogram aggravated the thrombophlebitic process in this case. Note that the upper femoral vein was patent when the venograms were taken and partially occluded at operation. Femoral vein ligation had a beneficial effect on the thrombophlebitic process both by the release of vaso-constriction incident to resection of portion of the vein and by interruption of the sluggish current of blood still flowing through the partially occluded vein. As the vein was not divided above the thrombotic process, it cannot be said that the procedure was an effective safeguard against further embolism. Further embolism did not, however, occur, and the Boston group has observed beneficial results under similar circumstances. It is noteworthy that the femoral artery was in a state of marked segmental contraction at the operative site, in spite of spinal anesthesia.

Case V.—B. M., Norfolk General Hospital, No. 8636, a thirty year old female was admitted on September 13, 1943. She was acutely ill with a temperature of 104.6° F., pulse rate of 136, respiratory rate of 40, and white blood count of 27,700. Examination revealed a violent thrombophlebitic process involving the varicose right saphenous vein and its branches and a pneumonic process at the base of both lungs. The patient stated that she had had enormous varicose veins in the right leg for years, and that she had been advised to have same ligated four years previously. The varicose veins had suddenly become painful, red and hard, without apparent cause, three weeks prior to admission.

Shortness of breath and episodes of uncontrollable cough had developed during the past few days. There had been no hemoptysis or pain in the chest.

Under supportive treatment which included the oxygen tent, sulfadiazine, and enormous hot wet compresses to the right leg and abdomen—for the thrombophlebitic process crossed the lower abdomen in the varicose superficial epigastric vein—the patient steadily improved. She was discharged from the hospital on September 28, fifteen days after her admission. The temperature, pulse rate, and leucocyte count had been normal for four days. The lungs were clear. The only sign remaining of the thrombophlebitic process was a patch of localized redness over the saphenous in the mid-thigh. No signs of deep vein thrombophlebitis had been observed at any time.

The patient was readmitted to the hospital four days later because of the sudden onset of pain in the right loin, worse with respirations, shortness of breath and paroxysms of coughing. She appeared even sicker than on her first admission with a temperature of 104.4° F., pulse rate of 142, respiratory rate of 30, red blood count of 3,430,000, white blood count of 10,300. Dulness and diminished breath sounds were observed at the base of the right lung and a chest x-ray showed a definite wedge-shaped area of consolidation at the right base. The only positive finding in the right leg was a dull brownish discoloration along the entire course of the previously inflamed saphenous. No evidence of deep vein phlebitis was found in either leg. However, having in mind the frequent coexistence of deep vein involvement in such instances, a venogram was made of the right leg, and this was interpreted as follows: "Extensive phlebitis involving the anterior and posterior tibial and femoral veins."

It now seemed clear that the patient's pulmonary complications had been embolic in nature on both her first and second admission to the hospital, and that presumably the emboli originated in the deep veins of the right lower extremity. Accordingly, femoral vein ligation was performed under panto-caine-glucose spinal anesthesia on October 5, 1943. The varicose saphenous was enormous and solidly thrombosed. At the femoro-saphenous junction, the femoral vein felt soft and appeared normal. The profunda femoral also seemed patent. A portion of the femoral was resected at this level between

double ligatures, without preliminary incision of the vein. A canalized thrombus formed a thin rim about the circumference of the resected vein. The saphenous vein was incised and emptied of its gelatinous organized material, preliminary to its ligation and division at its femoral junction. A culture and smear were taken from the saphenous stump and these were subsequently reported as showing 100 per cent hemolytic streptococci. The wound was sprinkled with sulfanilamide powder and closed without drainage.

For several days postoperatively, the right thigh was taut and swollen. Otherwise, the patient seemed remarkably well. On the fourth postoperative day, there was a sudden rise in temperature to 102.8° F. and several episodes of coughing and dyspnea. No changes were noted in the pulmonary signs and we were unable to decide whether a postoperative infarction had occurred. A transfusion had been given the previous day and the fever could have been a delayed transfusion reaction. No further similar spells occurred. The patient was discharged on the tenth postoperative day. The thigh had softened, only moderate swelling of the lower leg existed, the lungs were clear and temperature was normal.

Comment: The case illustrates spontaneous septic thrombophlebitis in varicose veins with co-existing and latent deep vein thrombophlebitis, resulting in recurring pulmonary embolism. The venograms furnished the only direct evidence that deep vein involvement existed. Whereas the ligation and division of the femoral was not entirely above the thrombotic process, it was above any free-lying clot and apparently had a salutary effect on the thrombophlebitic disease. It was apparent from the culture that the thrombosed saphenous was septic. No culture was made from the divided femoral—a regrettable omission.

The postoperative course of femoral vein ligation has usually been smooth. The procedure apparently has a salutary effect on the thrombophlebitic process, for fever, pain, and swelling rapidly disappear. This may be partly due to release of vasoconstriction incident to resection of a segment of the vein, but I believe the more likely explanation is the cessation of function with cessation of any current of blood through the vein. In any event, the patient is usually ambulatory in five to six days, and home shortly thereafter, without further embolic

episodes or other complications. Late effects of femoral vein ligation have likewise been negligible. No more leg swelling has persisted than was to be expected from the initial thrombophlebitic process, and in some instances, even less. Ligation above the profunda femoris will cause more swelling of the thigh than if the procedure is performed below this branch.

I wish to thank Dr. P. B. Parsons, of the Department of Radiology, Norfolk General Hospital, for making and interpreting the excellent venograms, and my associate, Dr. Arnold Zetlin, for his skillful management of the pulmonary complications of the cases reported.

SUMMARY AND CONCLUSIONS

The principles underlying the procedure of femoral vein ligation for the prevention of pulmonary embolism have been reviewed.

Three cases of pulmonary embolism in which the femoral vein was ligated with cessation of the embolic episodes are reported.

Emphasis is placed on early recognition of thrombophlebitis of the lower extremity, and especially of thrombophlebitis in the deep veins of the calf.

Femoral vein ligation is advocated as a routine emergency procedure whenever pulmonary embolism incident to lower extremity thrombophlebitis has occurred. In such instances, the procedure may well be life-saving. Whether femoral vein ligation is to be routinely performed in all cases of deep vein thrombosis remains to be proven, but, in time, the dictum may well be "the treatment of femoral vein thrombophlebitis is femoral ligation".

Ligature of the femoral at as high a level as possible often has a salutary effect on the thrombophlebitic process even though the ligation is not performed entirely above the inflammatory process, due to total interruption of the blood flow through the affected veins.

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DISCUSSION

DR. HUGH H. TROUT, Roanoke: Dr. Lowenberg has brought to our attention a very important piece of work. As he has said, and you know, this work originated with Dr. John Homans in Boston; and anything advocated by Dr. Homans deserves the sympathetic consideration of medical men throughout the world. It originated about four years ago. Of course, the work was started by Dr. Homans to prevent the occurrence of pulmonary emboli. The question comes up why we should not directly attack all cases of thrombophlebitis in the calf. The situation has been changed with the recent introduction of the sulfa drugs. The question has been heretofore whether we should resect the inflamed vein and stir up infection. Now perhaps we can prevent the infection by the use of the sulfa drugs.

We have had seven of these cases. We resected the vein in the calf and applied sulfa drugs, and we have had very satisfactory results. We had no unpleasant results and have had no emboli following.

We had had two very unpleasant results from the misuse of the Paevex machine. We had two cases in which the Paevex machine was used, one of them, I am sorry to say, in our own hospital. It is perfectly logical that that would dislodge and stir up emboli. Having had that experience, I am very slow to advocate using the Paevex machine or any other machine for fear of dislodging an embolus.

I do think what Dr. Lowenberg is doing is a safe procedure and that it is one worthy of the attention which it is receiving in the hands of surgeons throughout America.

DR. P. B. PARSONS, Norfolk: I should like to mention a few things about the technical procedure that is followed in the making of venograms. First of all, I have been using diatriz in all of them. This drug, while usually innocuous, can give rise to dangerous reactions. To guard against this we do eye tests in all cases. If there is a mild reaction or none it is considered safe to use the dye. If there is a severe or rapid reaction the use of this dye is contraindicated. Another factor that must be considered is the application of the cuff. Since this is applied over the calf, if it does not have the proper tension, the superficial veins will fill and the deep ones will not receive the proper amount of dye. Therefore a false positive could be obtained; that is, the deeper veins might

be reported as occluded by virtue of the fact that the dye is carried away in the superficial venous system. Some authors advocate a pressure of twenty to thirty millimeters of mercury. I think that a pressure of about forty millimeters is better. Twenty cc. of diatrast is injected, in one minute, into a branch of the saphenous. X-rays are made immediately after this injection. The technique for taking these should be thoroughly worked out before any attempt is made to inject. We usually make films at a distance of six feet, with very high penetration. The groin, thigh and leg are pictured simultaneously. Last, it must be recognized that this is a relatively new field and we have not much to go by. The only way we can achieve a high degree of accuracy in the films is by many examinations.

DR. J. GORDON RENNIE, Pulaski: I wish to mention one or two cases we had in the Pulaski Hospital. We had five. One of them was of particular interest—a young woman of eighteen, married, who had an eight-months' pregnancy and developed phlebitis before delivery. We thought this an unusually good case to try it on, because of the danger of embolus at the time of delivery. So we did the operation on this case. She made a nice recovery and had her baby a month later with no trouble. The only complication was that she had a mild infection in the wound, which I think is difficult to avoid, because the vein is infected.

Another difficulty we had in a couple of cases was that we were unable to withdraw the clot. We attributed that to operating on the case a little late. I should like to know what Dr. Lowenberg thinks about that.

DR. LOWENBERG, closing the discussion: I wish to thank Dr. Trout and Dr. Parsons for their kind discussion of the paper.

Dr. Trout mentioned the direct attack in the calf of the thrombophlebitic process. It seems to me that is going to prove more formidable than femoral-vein ligation. We are trying, in the femoral-vein ligation, to get in a clean field, away from the inflamed area. We endeavor to diagnose these cases early and ligate and divide the femoral probably three or four or five inches above the affected area.

This venogram (showing slide) does not show up well, but in the original you can see clearly the filling defect. I do not think a venogram should be taken unless there is an embolus. If the patient already has an embolus, certainly one is justified in taking a venogram.

With reference to coming down on a thrombosed vein, that has happened to me in two instances. If one resects a portion of the vein one interrupts the circulation in that vein. This usually stops the embolic process. There is no place where ligating the vein will cause more edema than the thrombophlebitic process would have done, regardless of the vein ligation. One should have the courage to go in and ligate the common iliac vein if necessary to get above the thrombophlebitis and stop the occurrence of embolism.

We have been in the habit of putting sulfanilamide solution in the wound in all cases. One is bound to get infection in some instances, as Dr. Rennie mentioned, when operating on infected veins.

Floral Eponym (16)

MAGNOLIA

THE magnificent *Magnolia grandiflora* that adds such delightful fragrance to our June atmosphere was named by Linnaeus for Professor Pierre Magnol (1638-1715) who introduced this splendid genus into Europe. Little is known today of this French physician and botanist. He was born in Montpellier in 1638 and died there in 1715. He graduated doctor in medicine at Montpellier in 1659 and became physician to the king in 1663. In 1694 Louis XIV made him professor of medicine at Montpellier and three years later the director of the botanical garden there. He originated the classification of plants by families and wrote several books upon botany. In 1709 the Academy of Sciences in Paris elected him a member.

Magnolia at one time occupied a place in our pharmacopoeia. The 10th edition of Wood and Bache's United States Dispensatory has this to say of it: "The medicinal properties which rendered the bark of *Magnolia officinalis*, are common to most, if not all, of the species composing this splendid genus. * * * *Magnolia* is a gently stimulant aromatic tonic and diaphoretic, useful in chronic rheumatism, and capable, if freely given, of arresting the paroxysms of intermittent fever. * * * The dose of the recently dried bark in powder is from half a drachm to a drachm, frequently repeated. The infusion may also be used, but is less efficient. Diluted alcohol extracts all the virtues of the medicine; and a tincture, made by macerating the fresh bark or fruit in brandy, is a popular remedy in chronic rheumatism."

THE MEDICAL TREATMENT OF PULMONARY EMBOLISM*

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The object of this paper is to present briefly some of the changes that occur following the development of pulmonary embolism and to stress the importance of the institution of a vigorous medical regime as soon as possible after an embolism has occurred. No attempt will be made to discuss the factors that predispose to its development nor to the management of these factors once they are recognized. The occurrence of thrombophlebitis and phlebothrombosis, their management, and their relationship to pulmonary embolism have been emphasized.¹

In the past many of us have considered pulmonary embolism an inevitable occurrence in a fortunately small percentage of individuals who are forced to remain in bed for several days to several weeks. These emboli usually arise from thrombi that form in the veins of the lower extremities or in the pelvis. Various methods have been suggested to prevent the occurrence of these thrombi, and partial success has been attained.¹⁻² If all such thrombi were recognized and if then the vein was always accessible, many pulmonary emboli could be prevented. This is not the case, however, and the importance of having available a means of medical management lies in the fact that a large pulmonary embolism may be the first indication that such a condition exists. Here prevention appears to be difficult and treatment life-saving.

When a large embolus lodges in the pulmonary arterial trunk, the circulation is immediately completely obstructed. Blood cannot leave the right ventricle and death ensues at once. If an embolus lodges in a large trunk or in a smaller branch of the peripheral pulmonary arterial system, death may also occur rapidly. The physiological mechanism producing death cannot be due to mechanical blockage alone. Pulmonary artery ligation is done during pneumonectomy without the occurrence of shock, right ventricular strain, etc. It appears therefore that certain physiological changes occur immediately

following the development of pulmonary embolus. Reflex pulmonary artery and coronary artery constriction, bronchial spasm, and gastrointestinal spasm with nausea and vomiting occur. Hypertension in the pulmonary circuit with acute cor pulmonale follows. The cardiac output decreases and systemic blood pressure falls. Due to the decrease in systemic blood pressure and to coronary artery spasm, myocardial ischemia may be pronounced and myocardial infarction may occur. Since these damaging impulses are initiated to a large extent, through the vagus, it is important to block all vagal reflexes as completely as possible. Atropine should, therefore, be used in adequate doses. Since papaverine is a vaso-dilator, it should be given simultaneously with the atropine.

Now a word about the diagnosis of pulmonary embolism. The classical picture of pulmonary embolism is not difficult to recognize. When a patient who has been lying in bed sits up or strains at stool, etc., and suddenly becomes dyspneic, develops severe substernal pain, pallor, sweating, weak rapid pulse, and low blood pressure, the diagnosis is obvious. The condition may be confused with myocardial infarction at times however even when typical. At times the symptomatology may be bizarre. Pneumonia, pleurisy or progressive heart failure may be suspected. In order to make the diagnosis in these instances, one must suspect the condition at all times and one must often employ all means to confirm one's suspicion. The finding of a hitherto unsuspected thrombosis of a deep leg vein may be a lead. X-ray examination may also be helpful. Characteristic E.C.G. changes often occur and, when they do, are almost diagnostic. These have been described by McGinn and White⁴ and by Barnes.⁵ The following changes were observed:

1. Prominent S-I with ST segment starting slightly below the base line.
2. Depressed RST segment in lead II with gradual ascent from S to T wave in lead II.
3. Usually a diphasic or monophasic T-II.
4. Q wave and definite inversion of T wave in lead III.
5. Positive T wave, occasionally diphasic, in Wol-

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*Read before the annual meeting of the Medical Society of Virginia, at Roanoke, October 25-27, 1943. This was read by Dr. J. M. Hutcheson due to fact that Dr. Beckwith had entered the service of the Armed Forces and could not be present.

forth lead. In lead IV-F, T-IV is inverted or diphasic.

All of the above changes are often not present, particularly with small emboli.

Careful clinical examination of the patient is very necessary and detection of signs indicating pulmonary hypertension and right ventricular failure is important. These are distended neck veins, gallop rhythm, accentuation of pulmonic second sound, distant heart sounds, low blood pressure, weak, rapid pulse, elevated venous pressure and peripheral edema.

When an acute episode occurs and the diagnosis of pulmonary embolism is made, or I believe suspected, therapy should be immediately instituted. This should be directed at relieving the anoxemia by the administration of oxygen in high concentration and simultaneously making an effort to re-establish the impaired circulation. The latter can be done in a number of instances by the administration of atropine grains $1/50$ and papaverine grains $1/2$ intravenously. Atropine inhibits vagal activity and papaverine relaxes smooth muscle.⁶ Then atropine grains $1/100$ and papaverine grains $1/2$ should be given every four hours until the danger is past. The response is often very dramatic, and a patient who looks moribund may be "responsive" in a short while. The heart rate becomes slower, blood pressure rises, the heart sounds become louder, and the color improves.

During the past two years, three cases of pulmonary embolism have been seen shortly after the condition occurred. All were treated as described and all obtained dramatic relief following the initial attack. Two died later with subsequent attacks and one recovered completely. It is probable that had the focus of the embolus been found, the latter episodes could have been prevented. The cases are presented:

CASE REPORTS

Case I.—Colored male, age 56, admitted to C. & O. Hospital 10-11-41 convalescing from pneumonia. He had been given sulfapyridine and developed an acute hemolytic anemia. All typical signs and symptoms as well as laboratory evidence of acute anemia were present. He was transfused three times and his hemoglobin and red blood count had come up to a satisfactory level. He continued to run a low grade fever and on his eighth hospital day, moderate ten-

derness of both calves was noted. No edema was present. The possibility of thrombophlebitis was considered and he was kept at complete bed rest. Eleven days later he suddenly developed severe dyspnea, sweating, and pallor. Pulse could not be obtained and heart sounds were very distant. The pulmonary second sound was moderately accentuated as compared to the aortic second sound. The neck veins were distended and he looked moribund. Oxygen was given by means of a tent. An E.C.G. was taken which showed evidence of acute cor pulmonale. Atropine grains $1/50$ and papaverine grains $1/2$ were administered intravenously. Within five minutes the patient looked considerably better. His pulse became palpable, the heart sounds improved, and dyspnea became much less severe. Atropine grains $1/100$ and papaverine grains $1/2$ were given every four hours for the next two days. The oxygen was continued during this time. A portable x-ray of the chest was taken the day after the attack occurred. This showed a triangular area of density near the right hilus. This was thought to represent pulmonary infarction.

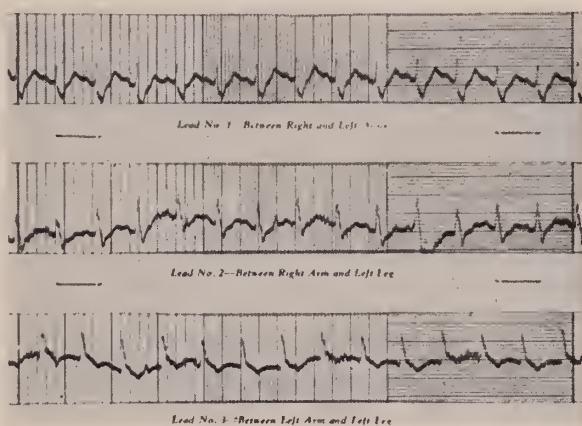


Chart 1.

Chart I shows the E.C.G. taken within 25 minutes after the attack occurred. There is a deep S-I and widened QRS complexes in all leads. RST-III is slightly elevated. Q-III is present and T-III inverted. One could mistake this for posterior basal infarction, but the deep S-I and widened QRS complexes are rather typical of acute right ventricular strain. Chart II shows an E.C.G. taken 18 hours after the attack. In this E.C.G., S-I is still present, but the QRS time is now normal and further E.C.Gs. show essentially this same tracing. This

patient progressively improved and was discharged from the hospital on 11-22-41 as well. We did not establish from where the embolus arose, but it was probably either a deep calf vein or the pelvic veins.

Case II.—A 57 year old white male was admitted to C. & O. Hospital 11-30-41 and discharged 12-20-41. A right inguinal hernia was repaired and a rectal polyp removed. The convalescence from these procedures was entirely uneventful.

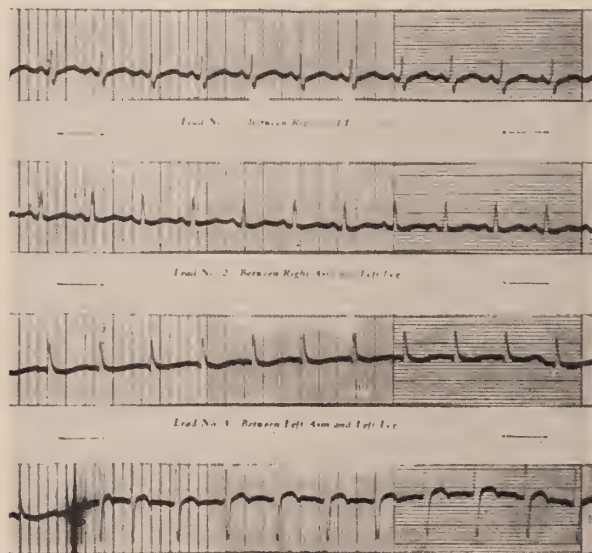


Chart 2.

He was next admitted 1-13-42, and a diagnosis of right lower lobe pneumonia made. No specific organisms were found in the sputum, but his clinical history and physical findings were typical. Sulfathiazole therapy was instituted and convalescence was uneventful. On the second day after discharge he noted slight swelling of the left ankle. This became progressively more severe. On the night of admission he suddenly developed severe substernal pain, dyspnea, and sweating. This lasted about one hour and recurred two hours later. His local physician sent him to the hospital.

On admission he was pale, sweaty, and cyanotic. The neck veins were distended, and the heart sounds were distant and rapid. A gallop rhythm was present at the apex. The blood pressure was 80/60 in both arms. The liver edge was percussed 2 cm. below the costal margin. There was definite swelling and cyanosis of the left lower leg and ankle. Tenderness was present in the calf and popliteal space.

Chart III shows the E.C.G. taken at 12:30 that night. There is evidence of right ventricular strain as shown by the presence of S-I and widened QRS complexes. The negative T-II-III and convex elevated ST-II-III are consistent with myocardial

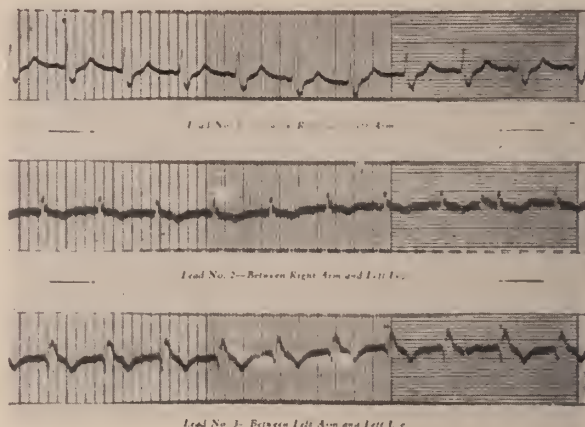


Chart 3.

ischemia. He was given an oxygen tent and atropine grains 1/50 with papaverine grains 1/2 were given intravenously. He improved in a short time and had a very good night. Grains 1/100 of atropine and

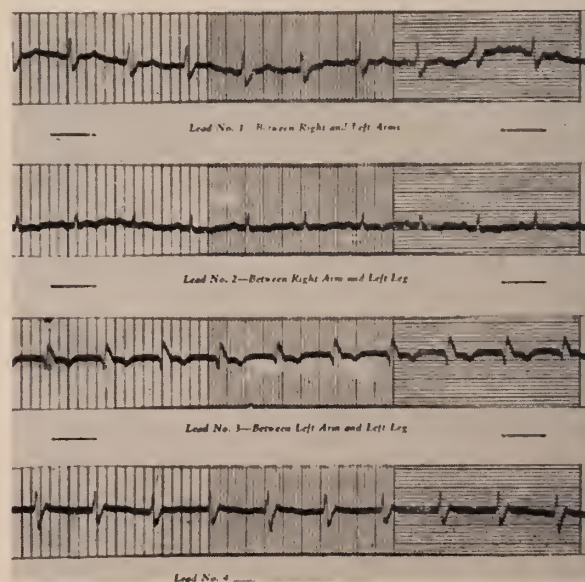


Chart 4.

grains 1/2 of papaverine were continued every four hours. Chart IV shows an E.C.G. taken the following day. The duration of QRS had decreased and ST elevation in II and III had decreased. This

indicates lessening of right ventricular strain and probable decrease of myocardial ischemia.

Conservative measures were instituted, though surgical ligation of the femoral vein was considered. The patient developed four other attacks of pulmonary embolism and right heart failure occurred. Measures to combat this were employed. Thrombophlebitis of the right leg developed and a pulmonary embolism occurred 2-5-42 which produced death in five minutes. At autopsy, many pulmonary emboli were found and a large embolus was obstructing the main pulmonary trunk. Thromboses of iliac veins and vena cava 5 cm. above the bifurcation were found.

Case III.—The third case is that of a colored male, age 49, who was admitted to the C. & O. Hospital 11-1-42. On 11-4-42 a bilateral inguinal herniorrhaphy was performed. On 11-16, the 12th post-operative day, pleuritic pain and elevation of temperature occurred. Chest x-ray showed evidence of infiltration in both bases, and was thought to be due to post-operative bronchopneumonia. Sulfadiazine therapy was commenced and his temperature began to fall, associated with clinical improvement.

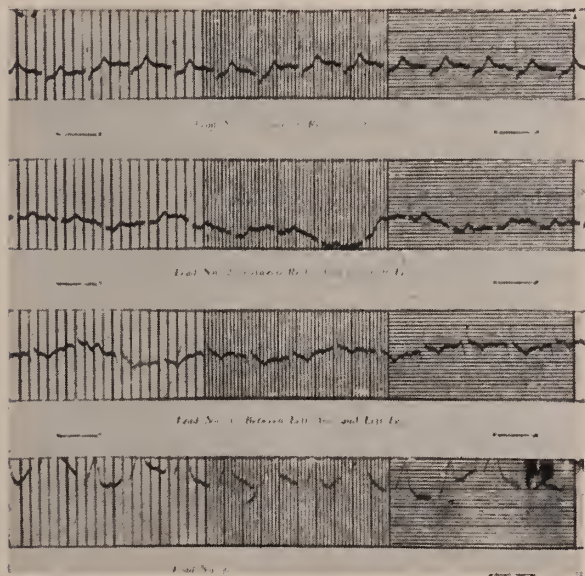


Chart 5.

On November 21, he suddenly developed severe pleuritic pain in the left chest anteriorly. Dyspnea was marked. All of the peripheral veins were collapsed, profuse perspiration occurred, the pulse increased to 130 and blood pressure was 60/50. Chart V shows

an E.C.G. taken immediately. There is deep S-I with depressed RST-I indicating right ventricular strain. Q-III is present, ST-III elevated and T-III negative. Papaverine grains 1, atropine grains 1/50, and aminophyllin grains 7½ were given intraven-

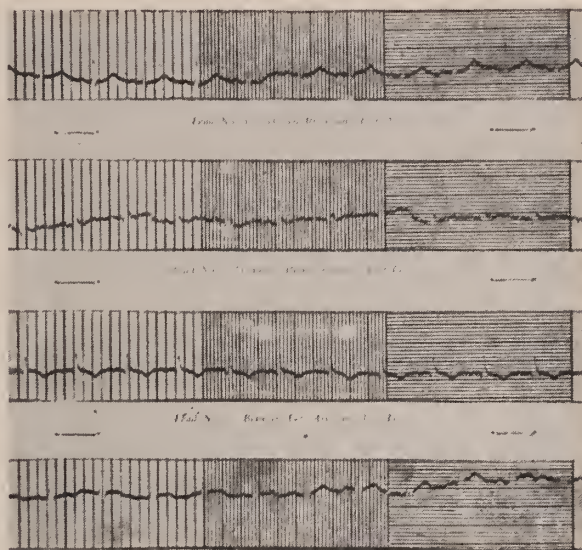


Chart 6.

ously and he was put in an oxygen tent. He improved dramatically and he had a fairly good night. The next A. M. he looked considerably better. Atropine grains 1/100 and papaverine grains 1 were continued every four hours. Chart VI shows an E.C.G. taken 14 hours after the previous one. S-I had disappeared, Q-III is smaller, and ST-III less elevated. The next two days were uneventful. He seemed to be improving when he died suddenly three days after the initial severe attack of pulmonary embolism. Just where the original focus was, was not determined. There was no evidence of peripheral thrombophlebitis, and it is probable that unrecognized pelvic vein thrombosis was present.

SUMMARY

The physiology of pulmonary embolism has been briefly discussed. Emphasis on vigorous medical treatment is stressed. Three cases were presented.

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DISCUSSION

DR. H. B. MULHOLLAND, Charlottesville: Dr. Hutcheson asked me to say a word or two about this paper. I think I shall only emphasize a few of the points that have been brought out.

The important fact is that all of us, when confronted with a case of pulmonary embolism, are about as panic-stricken as the patient is. But, as brought out here, there is something one can do which may in some cases be life-saving. I think, also, Dr. Hutcheson will agree that in most instances it is not necessary to have an electrocardiogram made to establish the diagnosis. The electrocardiogram simply confirms the diagnosis. The clinical picture is usually self-evident.

Dr. Beckwith mentioned the fact that pulmonary embolism might be confused with acute myocardial infarction, which is true. But if one is confronted with the same set of symptoms and the diagnosis is acute myocardial infarction, one may use exactly the same treatment, namely, atropine and papaverine—atropine being given intravenously. One-fiftieth of a grain of atropine given intravenously sounds like a heroic dose, but it is necessary to treat these patients heroically in order to save them from impending disaster.

A few years ago, in a paper published in the *Journal of the American Medical Association*, it was brought out at autopsy that many of these patients had died of a very small pulmonary embolism and, that the apparent cause of death was the reflex effect from the vagal impulses that Dr. Beckwith mentioned in his paper. The treatment with atropine and papaverine, the latter drug

is very difficult to get now, is sound and will undoubtedly save some lives.

DR. EUGENE L. LOWENBERG, Norfolk: I have treated a good many cases of milk-leg and have been interested in the problem of pulmonary embolism. I have made it a rule that if a patient shows any signs of pulmonary embolism to give Papaverine Hcl, $\frac{1}{2}$ grain intravenously, at once, and 1/100 grain of atropine subcutaneously. It must be given right away. I think the order should read: "Give 'stat.' if signs suspicious of pulmonary embolism develop, without waiting for the physician or interne to arrive." Atropine and papaverine should be given immediately.

I notice Dr. Beckwith did not mention Heparin. And, frankly, I think he was wise, because I cannot see the rationale of its use in these cases and I have seen pulmonary embolism develop in these cases under the use of Heparin.

One case in six who has had an embolus will develop another from which he will die. Since ninety-nine per cent of all cases of embolus develop from thrombosis in the veins of the leg, if ligation of the femoral vein is done at once, perhaps one patient in six will be saved by this method.

DR. J. M. HUTCHESON, closing the discussion: I do not think that Dr. Beckwith intended to convey the impression that the diagnosis of pulmonary embolism is an electrocardiographic matter. Occasionally an electrocardiogram is very helpful in differentiating pulmonary embolism from other conditions, especially myocardial infarction.

Pulmonary embolism is a rather common condition. It is usually thought of as occurring after surgery, but frequently it also occurs in cases which have not had surgery. In the three cases Dr. Beckwith reported the pulmonary embolism followed pneumonia. Whether the sulfonamides had anything to do with that it is hard to say, but it is rather striking that all three cases had had that treatment. Nowadays, however, few cases are allowed to have fever very long without getting sulfonamides of some kind, so that may be a coincidence.

We think of pulmonary embolism as belonging to three classes: the mild case that recovers without any treatment, the severe case that dies in spite of treatment, and the intermediate case that requires some help but may recover. I think it is our duty, therefore, to differentiate these cases as soon as possible and apply what treatment we have.

QUESTIONS ON THE VITAMIN B COMPLEX AND ON IODIN, SULPHOCYANATE, AND MENDELEJEFF'S LAW

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Clinicians are constantly running into things they would like to refer to their colleagues engaged in research, much as a farmer takes his grist to the miller to be ground. While this is probably not what Dean Jacques P. Gray had in mind for the College number* of the MONTHLY, I should like to use his invitation as an opportunity to ask certain questions. It may be that some of the answers are available already, in the Library.

Mills¹ said that tropical people seem doubly handicapped with respect to B vitamins, in that their

rates than did those with pork imported from the United States.

I. Are there geographical variations, dependent upon climate, in the vitamin B content of foods? There seems to be such a variation in the vitamin A content of milk.³ Milk in Wisconsin showed a much lower content of carotene and vitamin A in the January-April period than in the June-October period. In Tennessee the peak came in April; in Wisconsin, in July; and in New York, in October. The peak in Tennessee was considerably lower than

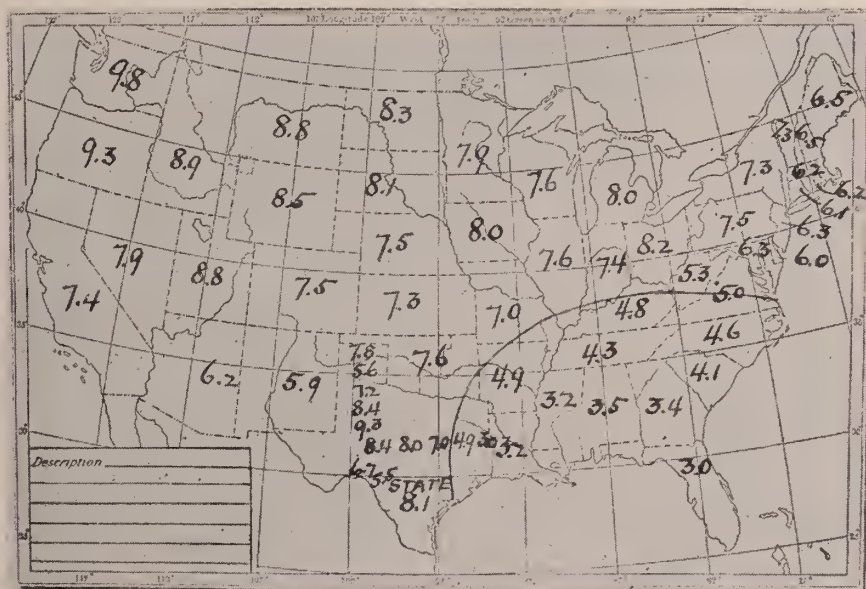


Fig. 1. Yield of wool per sheep, by states, in 1926. The years 1926-1929 show only negligible differences. United States Department Agriculture: Yearbook of Agriculture, 1930, p. 880.

requirements are higher and their supply more deficient than those of people living in cooler climates. If this is so it is contrary to a good deal of biological philosophy, and an opposite finding as to requirement of B₁ was reported by other investigators.² Mills stated that tropically grown meats seem to be deficient in thiamin, for test feedings with Panamanian pork loin gave much lower excretion

in Wisconsin and New York. The minimum, in January, was similar for the three.

Elvehjem and his coworkers found that the nicotinic acid content of different samples of yeast varied from 30 to 100 mg. per 100 Gm., dry weight, and this made difficult a comparison between dog assay and chemical methods.⁴

II. (a) Does black tongue in dogs in the United States have a geographic distribution and seasonal variation similar to endemic pellagra? (b) Is this deficiency disease tied up with the socio-economic

*This paper was prepared for the Medical College of Virginia issue of the MONTHLY, but, on account of limitation of space, is one of a number whose publication had to be postponed.

status of the dog's master, or is his meat, like the Panamanian meat, relatively deficient in an anti-black tongue factor.

In 1938, in a personal communication, the Chief of the Pathological Division, Bureau of Animal Industry, United States Department of Agriculture, wrote that so far as his office knew, there were no statistics available on the geographic distribution and seasonal incidence of black tongue in dogs. But another name for the disease is southern canine plague, and veterinarians have said to me that its distribution is distinctly southern.

III. By what nutritional control do sheep in "the pellagra belt" grow less wool than those outside the belt? Inside the area of endemic pellagra the yield of wool is less than 5 pounds per sheep; outside, it is nowhere so low (see Fig. 1).

According to Winegar and his coworkers,⁵ sheep seem to be able to synthesize nicotinic acid. While dogs restricted to a typical black tongue-producing diet, after about twenty-eight days, virtually cease to excrete nicotinic acid in the urine, sheep continue to excrete it on a diet deficient in this constituent, and it is not essential for their growth.

IV. Though Mendelejeff's law is stated as applying to elements only, does the atomic weight of iodine and the sum of the atomic weights of the radical SCN relate them according to the principle of the periodic law, and thus account for certain physiological and pharmacological relationships that they have?

CN, an inhibitor of oxidation in tissues, is detoxified by S, to form SCN.

At ordinary temperatures HCNS polymerizes, forming an amorphous yellow substance. The 3-polymer conception of SCN, like the radical itself, fits neatly into the halogen group with respect to the periodic law.

C	N	F	S	Cl	SCN	Br	I	(SCN) ₃
12	14	19	32	35.4	58	80	126	174
			I	126.0		Cl 35.4		Br 80
			2)	161.4		2) 115.4		2) 254
				80.7		57.7		127
				Br 80.		SCN 58.		I 126

In Pauli's system the sulphocyanate radical exerts the maximum inhibitory effect on the precipitation

of protein, next to it being iodine and bromine ions.⁶ Sulphocyanate of the saliva is diminished or disappears entirely during the administration of iodine.⁷

Marine and his coworkers investigated the goitrogenic factor in cabbage fed to rabbits,⁸ and following the investigation found that by injection of methyl cyanide (acetonitril) they could readily produce exophthalmos, proportional to the goiter, in rabbits.⁹ The administration of iodine to rabbits with intact thyroids prevents the exophthalmic reaction to methyl cyanide. The feeding of potassium iodide¹² and of thyroid¹³ to mice protects them against acetonitril.

Winter cabbage, not summer cabbage, produces goiter when fed to rabbits. The cabbage contains a goitrogenic agent, and an antigoitrogenic agent other than iodine, possibly hexuronic acid. This antigoitrogenic substance is present in a great variety of plants but in highly variable amounts as regards age, species, and climate.¹² The antigoitrogenic substance in cabbage showed a seasonal variation, in 1929, as expressed in the following ratios: April 5.4, July 4.7, September 3.5, October 3.5, November 2.8, December 2.6.¹³

The foregoing notes doubtless suggest other questions that some investigators might regard as more immediate and more pertinent than those that have been formulated.

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FALSE NEGATIVE RESULTS IN THE FRIEDMAN TEST FOR PREGNANCY

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This paper is limited to the discussion of errors in the Friedman's rabbit test for pregnancy in which negative results have been reported when the patient tested was actually pregnant. These cases are being reported because we feel that one reason has been found for false negative results in the Friedman's test and we believe that unnecessary errors may be eliminated in this biological test which has been found to be otherwise very dependable.¹

The technique of the Friedman's test is as follows: A morning specimen of urine is collected and preserved by refrigeration or chemically if necessary. This urine is filtered and ten cc. injected into the ear vein of a mature non-pregnant rabbit. At the end of twenty-four hours the injection is repeated. Forty-eight hours after the initial injection a laparotomy is performed upon the rabbit and a positive test is shown by the presence of from two to fourteen corpora hemorrhagica or corpora lutea in either ovary. A negative test is reported when the ovaries remain small in size and show no change.²

As shown by Friedman in his original paper, if positive, the test is one hundred per cent accurate.³

The test as used throughout the country has been found to be very accurate if a positive test is reported, and about 95 per cent accurate if the result is negative. In order to insure the accuracy of the test the rabbit must be mature, and not pregnant, nor in heat, and the urine must be a morning specimen and preserved if the test is delayed.

Prior to 1940 in the laboratory of the Elizabeth Buxton Hospital, though no statistical analysis was made, it was felt that if a negative result was reported the report could be depended upon in 98 per cent of the cases tested. However, in the same laboratory and under the same conditions since 1940 the negative results have been found to be accurate in only about 70 per cent of the cases. Naturally, an attempt was made to find the cause of this large error, which had not been previously evident, and which has been noted only in the past few years. It was found in thirty-four cases tested that the total

number of errors was eight. Of these eight errors there is reason to suspect that in one case the patient brought in the wrong urine specimen. In another case it is known that the urine specimen was secured in the afternoon, rather than in the morning. In two other cases no reason for failure could be found. Of the four remaining cases of false negative reports all four patients had received an estrogenic hormone prior to the examination of the urine.

These four cases are reported in detail as follows:

Case 1.—A multiparous white woman, forty-two years old, was referred to the hospital on April 6, 1940, for removal of an ovarian cyst. Menstrual periods had been irregular for about one year and there had been some recent spotting. Examination revealed a large fluctuant mass in the right lower quadrant. Pregnancy was suspected but no fetal heart sounds could be heard, nor were movements felt. The patient was highly neurotic. A Friedman's test was negative and operation was advised. A normal pregnancy was found and the pregnancy was interrupted with the concurrence of the attending physician because of psychosis, a hysterotomy being done. The patient was then found to have been receiving theelin for over a period of some months because of menopausal symptoms.

Case 2.—A twenty-eight year old white woman was operated upon on May 12, 1942, and a left ovarian cyst was removed. Following this, menstrual periods were irregular for several months. In February, 1943, she was examined for irregular bleeding for which no cause could be found and the patient was given several injections of theelin. A Friedman's test on February 19 was negative for pregnancy, but this patient aborted on March 19, 1943.

Case 3.—A multiparous white woman, thirty-nine years old, was seen at the clinic on July 22, 1941, having missed one period. She had been under treatment in another city for menopausal symptoms for six weeks and had received several injections of theelin. A Friedman's test was negative but a clini-

cal diagnosis for pregnancy was made and the patient delivered spontaneously in March, 1942.

Case 4.—A twenty-eight year old white girl had missed two menstrual periods and a urine specimen was sent in by her family physician. A first morning specimen was used for the test, which was negative. Another specimen was sent in ten days later which, likewise, was negative. Her physician was questioned about the possibility of the patient's taking medicine of any kind. He denied that she was, but upon further investigation it was found that the patient was taking stilbestrol on her own accord. She was taking at least one mg. daily. She was advised to discontinue this for one week, at which time a third specimen was submitted and this proved to be strongly positive. The subsequent course of this patient has proved the diagnosis of pregnancy to be correct.

In addition to the above four cases in our series the following case is reported, having been seen by a member of the staff during the past two years:

The patient, a multiparous white woman, twenty-six years old, was seen one week after she had missed a menstrual period. It was not thought that she was pregnant and she was given ten milligrams of stilbestrosal by mouth daily for one week. Three months later she was seen and found to be four months pregnant. She delivered spontaneously at term. (Dr. Emanuel Greenspon).

An additional case was treated as follows: The patient, a colored girl, twenty years old, six months pregnant, was examined and a Friedman's test performed and reported as positive. During a period of seven days she was given a total of 40,000 units of theelin in oil intramuscularly. A Friedman's test performed two days after the last dose of theelin was negative.

It is interesting to note at this point that, in a

paper published in 1934 by Davy and Sevringhaus, titled: "An Analysis of Pregnancy Tests",⁴ one case was reported in which a negative result was obtained ten weeks after the patient had missed a menstrual period and a positive result was obtained after the fourteenth week of gestation. Prior to the first test it is stated that the patient had received four doses of theelin in oil. In that paper the false negative result was attributed to hormonal imbalance, but in view of our experience it was undoubtedly due to the injection of theelin.

It is evident from the cases examined during the past three years in our laboratory that the percentage of false negative results of the Friedman's test have been exceptionally high. It has been realized that the majority of these false results were obtained on patients who had been getting an estrogenic hormone. Furthermore, in one case of known pregnancy with a positive rabbit test, the patient was given large doses of theelin in oil intramuscularly and a negative Friedman's test was obtained thereafter.

In conclusion, it is possible to state that the results of the rabbit test for pregnancy as described by Friedman may be influenced by the administration of stilbestrol or theelin.

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PRIMARY ATYPICAL PNEUMONIA

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Recently the literature has been fashioning a clinical picture of a syndrome characterized by an acute respiratory infection associated with atypical pulmonary lesions in which bacteria are apparently not the prime etiological factor. Numerous publications¹⁻⁶ have described essentially the same syndrome by a variety of names, but the terminology we have adopted is "Primary Atypical Pneumonia" as suggested by The Surgeon General of the United States Army.⁷

The etiology of this type of pneumonitis is, at present, unknown, and bacteriological studies on the blood and sputum have failed to reveal any definite etiological organism in the uncomplicated cases. However, animal passage and serological studies by Stokes and Kenny,⁸ Francis and Magill,⁹ and others, strongly suggest a filterable agent recovered from the nasopharyngeal secretions as a possible causal factor. Future studies may prove that primary atypical pneumonia is not a single disease entity, but rather a clinical syndrome with multiple etiologies.¹⁰

The fifty-nine cases of primary atypical pneumonia comprising this report were observed in England and in northwest Africa among American troops. (The first fifteen cases in this series were studied in October, 1942, in England, and the remaining forty-four cases observed in northwest Africa during the months of January and February, 1943). This series of cases, all of which exhibited positive x-ray findings, were analyzed from the standpoint of signs, symptomatology, x-ray data, clinical course, and therapy; and the results form the basis of this report.

I—CLINICAL FEATURES ON ADMISSION

A. *Onset* (see Chart I). A gradual onset of symptoms was noted in 83 per cent of the cases. That is, a period of two or more days elapsed between

CHART I

ONSET SYMPTOMS OBSERVED IN PRIMARY ATYPICAL
PNEUMONIA—BASED ON 59 CASES

CHILLINESS	85%	(50 out of 59 cases)
GRADUAL ONSET	83%	(49 out of 59 cases)
GENERALIZED ACHES	81%	(48 out of 59 cases)
NON-PRODUCTIVE COUGH	80%	(47 out of 59 cases)
BACKACHES	76%	(45 out of 59 cases)
MALAISE	75%	(44 out of 59 cases)
LUNGS (ABNORMAL SIGNS)	73%	(32 out of 44 cases)
THROAT REDDENED AND INFLAMED	68%	(30 out of 44 cases)
LEG ACHES	66%	(39 out of 59 cases)
CHEST ACHES	64%	(38 out of 59 cases)
ARM ACHES	61%	(36 out of 59 cases)
FEVER, HOT FEELING	56%	(33 out of 59 cases)
HEADACHES	54%	(24 out of 44 cases)
ANOREXIA	41%	(18 out of 44 cases)
PRECEDING URI	37%	(22 out of 59 cases)
SORE THROAT	30%	(13 out of 44 cases)
CHEST PAIN	25%	(11 out of 44 cases)
PRODUCTIVE COUGH	20%	(12 out of 59 cases)
SUDDEN ONSET	17%	(10 out of 59 cases)
TRUE CHILL	7%	(4 out of 59 cases)
CONSTIPATION	7%	(3 out of 44 cases)
NAUSEA	5%	(2 out of 44 cases)
DYSPNEA	2%	(1 out of 44 cases)
CYANOSIS	0%	(0 out of 44 cases)
NOSE BLEEDS	0%	(0 out of 44 cases)

the onset of initial symptoms and the patient's hospitalization, this being considered as the criteria of a gradual onset. Of this 83 per cent, a two to five day period of onset was noted in 60 per cent, a six to nine day onset in 30 per cent, and ten or more days in 10 per cent. Only ten of the cases (17 per cent) had an explosive onset, ranging from three to thirty-six hours.

B. *Chilliness*. In contra-distinction to the characteristic true shaking, teeth-chattering chill which usually accompanies the onset of bacterial pneumonia, and which was found in only 7 per cent of these primary atypical pneumonia cases, chilliness was the initial complaint in 85 per cent of the

cases. We were definitely impressed with the fact that this differentiation between chilliness and true chill was of real diagnostic value, a bacterial pneumonia or malaria being strongly suspected in cases having a true chill.

C. Generalized Aching. Eighty-one per cent of the patients complained of an aching of one or more joints of the body—the predominant site being the low back. Headaches were present in 54 per cent of the cases. In a small group of cases the headaches were of such severity as to suggest the possibility of meningitis, but nuchal rigidity and Kernig signs were lacking in each case. The generalized aching seen in these cases of primary atypical pneumonia did not seem to be as severe as that complained of by patients with virus influenza.

D. Cough. Cough was present in all cases and was non-productive in 80 per cent of the cases. Two cases showed blood-streaked sputum, but there were no cases of frank hemoptysis or rusty sputum. Changes in the character of the cough noted during the course of the disease are discussed later.

E. Malaise and Abnormal Weakness. These symptoms were noted in 75 per cent of the cases, being exceeded in frequency as the predominant complaint only by chilliness and cough.

F. Anorexia. Forty-one per cent of the cases complained of anorexia, while nausea was complained of by 5 per cent. No vomiting was encountered. Constipation was present in 7 per cent of the cases.

G. Preceding Upper Respiratory Infection. Preceding upper respiratory infection, including symptoms of coryza, was present in 37 per cent of the cases. It is our opinion, as well as the opinion of others,¹⁰ that upper respiratory infection is not a common precursor of primary atypical pneumonia.

H. Chest Pain. Chest pain, usually substernal, present only on coughing and uninfluenced by respiration, was present in 25 per cent of the cases.

I. Onset Dyspnea. Dyspnea was present in one case, which is in marked contrast to the characteristic onset of bacterial pneumonia.

II.—PHYSICAL EXAMINATION ON ADMISSION

1. An inflamed nasopharynx was noted in 60 per cent of the cases.

2. Abnormalities in physical examination of the chest were noted on admission in 73 per cent of the cases.

a. *Inspection*—no changes noted.

b. *Tactile Fremitus*—decreased over involved

areas in 7 per cent of the cases.

c. *Percussion Impairment*—noted in 10 per cent of the cases. This abnormality was in the form of dullness over involved lung area.

d. *Auscultation*—suppressed breath sounds were noted in 30 per cent of the cases, voice changes in 5 per cent. Rales, principally coarse in character, were heard in 58 per cent of the cases at the time of admission. Bronchial breathing was noted in only one case.

3. The temperature on admission averaged 100.5 degrees Fahrenheit. The highest temperature in the series was 103.2 degrees Fahrenheit, and the lowest was 97.0 degrees Fahrenheit.

4. The pulse rate on admission averaged ninety-eight per minute, with extremes of a hundred and fifty and fifty-eight.

5. The average respiratory rate on admission was twenty-one per minute, with twenty-seven as the highest, and eighteen as the lowest rate.

6. Cyanosis was not observed.

III—LABORATORY DATA

The white blood cell count averaged 7,400 per cubic millimeter on admission, while the highest was 14,140 per cubic millimeter and the lowest was 4,100 per cubic millimeter. The differential count averaged 62 per cent polymorphs and 38 per cent lymphocytes. The red blood cell count averaged 4,120,000 per cubic millimeter.

Albumin and pus cells were found in two of the non-sulfonamide-treated cases, while red blood cells were found in four of the seventeen sulfonamide-treated cases. However, no clinical urinary complications were encountered in this series.

IV—X-RAY

There were positive roentgenological findings in all cases in this series. Chart II shows the distribution of the lesions.

CHART II

LOCATION OF ROENTGENOLOGICAL SIGNS	
Right Upper Lobe	0%
Right Middle Lobe	5%
Right Lower Lobe	35%
Left Upper Lobe	10%
Left Lower Lobe	43%
R. L. L. and L. L. L.	2 cases
R. M. L. and L. L. L.	1 case 7%
R. M. L., R. L. L., and L. L. L.	1 case

buton of the lesions. The lower left lobe was the favorite site, being observed in 43 per cent of the cases. The right lower lobe was involved in 35 per

cent of the cases. Two or more of the lobes were involved in 7 per cent of the cases.

The lesions were usually apparent on admission, or appeared within the first forty-eight hours of hospitalization. The character of the lesions, in the majority of the cases, correspond to that described by Dingle and Finland¹⁰—a soft, fan-shaped area of hazy irregular mottling extending outward from the hilum towards the periphery of the lung field, and seldom occupying more than a portion of a lobe.

V—SEDIMENTATION RATE

Sedimentation rate determinations were made in eight cases and were found to be elevated in all of the cases, averaging 22, 25 millimeters per hour.

VI—CLINICAL COURSE AND COMPLICATIONS

That the average clinical course of this disease entity is mild, was borne out in this series, the average febrile period being five and eight-tenths days after admission to the hospital, and the average period of hospitalization being twelve days. The longest febrile period was twenty-one days; this patient also required the longest period of hospitalization, namely, thirty-three days. There were no deaths, and only four of the cases were classified as seriously ill.

In every case the temperature fell by lysis, a significant secondary rise in temperature after the third day of hospitalization occurring in approximately 10 per cent of the cases, of which 7 per cent were accounted for by an associated migration of the lesions to other lobes.

Seventy-three per cent of the cases revealed some abnormality on physical examination of the chest at the time of admission, and an additional 8 per cent, making a total of 81 per cent, developed abnormal pulmonary physical signs at some time during their hospital stay. The commonest abnormal findings, on examination of the chest during the later stages of the illness, were coarse rales, either over the involved lung area, or throughout the chest. The rales were noted particularly when the cough became productive.

The majority of the patients developed a persistent and almost intractable cough which failed to respond regularly to medication, often becoming paroxysmal in character, and usually worse at night. In all of the cases the cough became productive at some period during the course of the illness, the sputum usually ranging from a watery consistency to a tenacious

yellowish material containing the usual bacterial flora of the nose and the throat. None of the cases displayed rusty sputum, although blood-streaking was noted in two cases, probably resulting from severe coughing.

No cases of bacterial secondary invasion developed in this series, the criteria of such a complication being a purulent sputum from which could be cultured a predominant pathogenic organism and a leukocytosis.

In four cases, where the febrile period was among the most prolonged in the entire group, the convalescent period was associated with considerable asthenia as manifested by abnormal fatigability and marked lability of the pulse rate.

Pleural effusion complicated six cases, or approximately 10 per cent of this series. In these patients the average febrile period was nine days, and the average hospitalization was twenty-one days. In this complication there was usually a sustained elevation of temperature, an increased respiratory rate, and somewhat more pronounced asthenia. In no instance did empyema develop, and the effusion was completely resorbed before discharge in every case.

A bizaare, and probably rare, complication developed in one patient; this being a herniated nucleus pulposus following a severe paroxysm of coughing.

VII—THERAPY

Our experience in the treatment of this disease tends to support the accepted belief that the therapy of primary atypical pneumonia is entirely supportive or symptomatic. As no cases of secondary bacterial invasion developed in our series, the use of sulfonamides was limited to those cases in which the drug had been started by a medical officer prior to admission to the hospital. In these cases the same sulfonamide was continued in full dosage until a total of twenty-five grams of the drug was given, unless a drug reaction developed which compelled discontinuance of this therapy. Seventeen of the cases received sulfonamide therapy, sulfathiazole or sulfadiazine being the drugs employed. The average period of hospitalization of these seventeen cases was seventeen days, and the average febrile period was ten days. Comparing these figures with the average period of hospitalization for the entire group (twelve days) and the average febrile period for the same group (five and eight-tenths), it is concluded that the sulfonamides were not only without benefit in the treatment of uncomplicated primary atypical

pneumonia, but that their use resulted in a prolongation of the average febrile period and the total period of hospitalization. It is the authors' belief that the conclusion reached is valid because sulfonamide therapy given by the above criteria was not reserved for the more severe cases of the group.

With the exception of those patients receiving sulfonamide, all cases received codeine sulphate, grains \overline{ss} , and aspirin, grains ten, every four hours until the temperature returned to normal, after which a cough mixture containing codeine sulphate, grains one-quarter, to each dram of elixir terpine hydrate was given as needed in an attempt to control the cough.

Oxygen therapy by a nasal catheter, or B L B mask, was successfully used for relief in the one case complaining of dyspnea, but an attempt to relieve two cases with marked paroxysms of coughing by the use of oxygen was unsuccessful. Steam inhalators, with tincture of benzoin in some instances, seemed to be helpful in relieving this annoying paroxysmal cough.

VIII—SUMMARY

From a clinical analysis of fifty-nine cases of primary atypical pneumonia, attention was called to a symptom complex which we believe to be rather characteristic of this disease. A gradual onset with chilliness, cough usually non-productive in the early stages, muscular aches, and substernal pain on coughing was found in the majority of the cases, later proven roentgenologically to have primary atypical pneumonia. The sudden explosive onset with true chill, dyspnea, cyanosis, cough productive of rusty sputum, and pleuritic pain accentuated by deep breathing, symptoms usually associated with lobar pneumonia, were lacking in this series. Of further differential diagnostic value was the paucity of abnormal physical signs in the chest, and the absence of leukocytosis in these cases, in contradistinction to the signs of pulmonary consolidation and leukocytosis characteristically found in bacterial pneumonia.

In our experience, the clinical course of this disease is usually mild with few complications. Pleural effusion, which developed in 10 per cent of our series, was spontaneously resorbed within ten days in each case and no cases of empyema were observed.

It is our opinion that sulfonamide therapy is contra-indicated in uncomplicated cases of primary atypical pneumonia. Using sulfonamides in a group of unselected cases it was found that the average febrile period was nearly doubled (from 5.8 days to 10 days) and the average period of hospitalization increased about 30 per cent (from 12 days to 17 days).

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SPINA BIFIDA AND POLYDACTYLY IN ONE-EGG TWINS—

Case Report and Medical Aspects*

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It has been found that twins occur once in every eighty-six births, and 25 per cent of the twins are monozygotic (arise from one egg); while 75 per cent are dizygotic (arise from two eggs).¹ Before making a study of any pair of twins, it is necessary to determine whether they are monozygotic or dizygotic. One egg twins are referred to loosely as identical twins because they are usually very similar. Newman has set up certain criteria for the diagnosis of one egg twins by the similarity method.² The other method of determining whether a pair of twins originated from one or two eggs is based on the relations between the placenta and its membranes. All authorities agree that twins which possess two amnions and no chorion in the partition wall are from a single egg. When twins come from two ova, there are always two amnions and two chorions, and we find each child contained in a separate set of membranes. When twins come from a single ovum, they are usually contained in the same chorion, but each possesses its own amnion. In occasional cases only one amnion is present for both children. This condition is unusual and is thought to result from a perforation of the wall separating the two amniotic cavities.³

Spina bifida occurs in about one out of every 1,000 single births.⁴ There have been no cases of spina bifida reported in which the condition was found in one-egg twins.

Polydactyly is that condition in which there is found more than the usual number of digits on the hands or feet. The condition is usually present on both hands or both feet when it is found.

I wish to present a case which is interesting in regard to the above discussion.

REPORT OF CASE

M. B.—A 24 year old negro woman was first seen in the Maternal and Child Health Clinic in

*This paper has been approved for publication by the Surgeon General of the U. S. Public Health Service.

Dr. H. H. Newman has contributed much information which has been useful in preparing this report. Mrs. Ruby A. Watkins, R. N., Public Health Nurse, brought this case to my attention and helped in securing material here presented.

Crewe, Virginia, March 24, 1943, at which time she gave a history of her last menstrual period having started on August 15, 1942. The duration of the period was four days. Her past history revealed that she had normal deliveries six years and five years previous to the time of examination. Eighteen months previously she had a stillbirth at full term.

The physical examination revealed a pregnancy of eight and one-half months. All physical and laboratory findings were within normal limits.

On April 13, 1943, she began labor at 9:00 A. M. and delivered identical twin females spontaneously at 1:00 P. M. in the presence of a midwife. The placenta was examined by an experienced and reliable midwife and found to be single (not in any way divided), and there were two cords attached to the placenta at different places. The twin babies were contained in a single compartment of membranes with nothing in the way of a separating partition between them.

The mother had an uneventful postpartum course. Her serologic test for syphilis has been checked and found to be negative. She stated that it had always been negative.

The twin female babies were examined by Dr. J. A. B. Lowry, of Crewe, Virginia, and by the author and found to possess the following characteristics:

A.—The babies were alike in the following respects:

1. Each weighed four pounds.
2. Each possessed two erupted upper central incisor teeth at birth.
3. Both babies were found to have lumbar spina bifida with myelomeningoceles. The entire lumbar region was involved in both babies, but the spina bifida defect was confined to the lumbar region. The spina bifida sacs were approximately seven centimeters in diameter at birth.
4. Both babies were afflicted with a spastic paralysis of both lower extremities.
5. Both twins passed urine and feces.

B.—The babies were different in the following respects:

1. Baby number one possessed two thumbs on the right hand only. The two thumbs were placed on

the lateral side of the hand. Both contained bone and both possessed nails. The most lateral thumb was slightly larger than the medial one.

She would take neither formula nor breast and expired 36 hours following birth.

2. Baby number two had a normal formation of fingers and toes. She took formula freely but expired 60 hours following her birth.

COMMENT

It is extremely unfortunate that the membranes, placenta, and babies in this case were not preserved as they would have been very useful in the study of the anomalies here presented.

This case has been discussed from the genetical point of view in another publication.⁵ In this paper we are chiefly interested in the medical aspects of the case.

In this case there was no doubt about the twins having originated from one egg since they not only fulfilled the qualifications as set up in the criteria for the diagnosis of one-egg twins by the similarity method, but the diagnosis was made even more definite by the examination of the placenta and its membranes. However, since the babies were contained in a single cavity and there was not the usual wall of two layers of amnion separating them in utero, we must consider them unusual. Holzapfel found 44 cases reported in which this condition was present.⁶ In the seventeenth century Viardel wrote of this condition which he said was usually present when the twins were the same sex; but if the twins were of different sexes there would be a partition of amnion separating them. He thought Providence took this means of guarding their morals before birth.⁷

During the short time these babies lived the possibility of correcting the spina bifida was considered. Since the parents were insistent that everything be done which might remedy the condition of the twins, they were seen by Dr. J. A. B. Lowry who advised against any surgical measures. Since these babies both had a spastic paralysis of the lower extremities they probably would have profited little by surgical treatment if they had lived; and so we can say that it is probably fortunate that they did not survive longer than they did.

It would be profitable for us to consider the possibilities in regard to the etiologic agent which may

have been responsible for the production of spina bifida in these children. It is generally agreed that spina bifida is due to a developmental arrest in which the neural tube does not completely close; however, it is difficult to separate the etiology of the spina bifida from the cause of twinning itself in light of the work of Stockard with the minnow, *Fundulus*.⁸ It is remarkable that spina bifida is not encountered more often in twins since both spina bifida and twinning are thought to be due to developmental arrests.

Hertwig has made several contributions in the experimental production of spina bifida in frogs.⁹ At first he thought the anomaly resulted from polyspermia but later concluded that the abnormality could be produced in any embryo by altering its normal environment.

Mall studied human embryos obtained from endometritis cases, from tubal pregnancies and other types of abnormal conditions. He found a high percentage of defects such as spina bifida in these embryos.⁹ He felt that the abnormality was due to faulty implantation of the egg in the endometrium, since the percentage of malformations was much greater among embryos from tubal pregnancies than among those from uterine pregnancies. He concluded that spina bifida was caused by the action of some outside influence on the egg after it was fertilized. On the basis of Mall's findings, some physicians have concluded that any woman who has had a pathologic pregnancy should be advised to undergo a thorough gynecologic examination and possibly have a curettage before subsequent pregnancies. We may have at least a partial answer in regard to the cause of the spina bifida in the twin pregnancy here described. The mother of the twins had experienced a stillbirth eighteen months before the present delivery; and there had been no intervening pregnancies. The abnormality may have resulted from a faulty implantation of the fertilized ovum in the endometrium. It will be of interest to watch this woman in future pregnancies.

There are diseases which play a role in the production of developmental defects. This is especially true of syphilis;¹⁰ however, this patient had a negative serologic test for syphilis at the time of the twin births and had never had symptoms, signs or findings indicative of this disease.

Polydactyly has been reported as having occurred

in one-egg twins, but the cases have all presented an extra little finger or little toe. None of them have possessed extra thumbs, neither have any of these cases been discordant in regard to this anomaly.⁵ In other words, the cases of twins with extra digits which have been reported previously have possessed extra digits on both hands or both feet of both twins.

SUMMARY

A case has been reported in which a pair of one-egg female twins were afflicted with lumbar spina bifida and myelomeningoceles in identical locations and to the same extent. The physicians who saw the infants considered the condition to be inoperable. Both babies had a bilateral spastic paralysis of the lower extremities.

One baby was found to have on the right hand a well developed extra thumb, which contained bones and possessed a normal appearing thumb nail. No food was taken by this twin and she expired 36 hours after she was born. The second baby had the usual number of digits on her hands and feet. She took formula freely, but she expired 60 hours after her birth.

Each baby possessed two upper central incisor teeth. This abnormal condition may have been caused by the babies being born several days after the end of the nine months period.⁵

Some theories and possible explanations as to the etiology of the abnormalities have been presented.

This case is of interest because it presents several abnormalities which have not heretofore been reported. It is hoped that from the study of these twins, physicians will be stimulated to consider measures which might prevent the conditions found here from occurring in other cases.

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Fainting During Blood Donation Has No Serious Significance.

"Fainting which may occur in blood donors during the bleeding procedure," *The Journal of the American Medical Association* for May 6 says, "does not have a serious significance. The symptoms are distressing nevertheless. In four blood centers in England the incidence of fainting was relatively small, averaging about 5.5 per cent of the total number of over 5,000 donors. The data collected from 362 blood donors who fainted during the bleeding procedure were studied in comparison with those of 335 unselected donors who did not exhibit subjective or objective symptoms. Evidence was not obtained that factors such as age, occupation, length of wait at the center before bleeding, difficulties in bleeding,

length of time since the last meal and presence of menstruation assumed any contributory role in producing or facilitating fainting. Sex appears to be a relatively significant factor in influencing the incidence of fainting. Symptoms were more frequent in women, especially in single women, than in men. Actually the only finding susceptible of control was that a high proportion of donors who fainted gave a history of fainting at previous bleedings or on some other occasions not related to blood donation. This suggests that, whenever possible, these persons should not be used as blood donors. Better and more complete knowledge of the neurocirculatory disturbance and reactions elicited by bleeding is necessary in order to devise controlling measures for the associated symptoms."

DEMONSTRATION OF TUBERCULOUS BACILLEMIA

A Comparison of Guinea Pig Inoculation of Whole Blood and Sediment Concentrated by the Loewenstein Method

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A detailed study of bacilleemia in experimental tuberculosis, undertaken by the author,¹ raised the question of the relative value of concentration methods as opposed to direct injection of blood into guinea pigs, for demonstration of tubercle bacilli.

The literature contains many references to comparisons of guinea pig inoculation and culture methods. Loewenstein² redirected attention to culture methods, with a concentration method designed to remove hemoglobin prior to inoculation on an egg medium designed by him. Other investigators, while admitting the value of his medium, have been unable to confirm his results. The subject of tuberculous bacilleemia has been critically reviewed by G. S. Wilson,³ who concluded that animal inoculation is more sensitive than culture methods for demonstration of tuberculous bacilleemia. A similar conclusion has been reached by most other investigators including Saenz, Costil and Sadettin,⁴ who reported that guinea pig inoculation gave 20 per cent to 35 per cent more positive results than culture by the Loewenstein method. This difference they attributed to the many manipulations of the Loewenstein method which probably decreased the number of tubercle bacilli. However, Saenz and Costil⁵ in an earlier paper reported that guinea pig inoculation and culture methods for tubercle bacilli gave corresponding results down to a dilution of $(2 \times 10)^{-6}$ corresponding to a dose of 20 tubercle bacilli.

Most of the controversy has centered about the relative merits of animal inoculation and various culture methods. I have found no reports comparing the results of direct inoculation of whole blood into guinea pigs with inoculation of sediment treated by the Loewenstein concentration method. It seemed important to do this in order to determine whether the various manipulations of the concentration appreciably decrease the number of tubercle bacilli in the specimen.

Accordingly a dog was injected intravenously with

7.0 mgm. of virulent human strain tubercle bacilli (H37) in a suspension of kaolin, mineral oil, and saline. Daily femoral arterial punctures were performed, withdrawing 6 to 8 cc. of arterial blood. Half the amount (3 to 4 cc.) was immediately injected subcutaneously into the groin of a guinea pig. The other half of the blood sample was citrated and treated by the Loewenstein method² for removal of hemoglobin and concentration of the sediment.

The procedure of concentration was as follows:

- (1) The citrated blood specimen was centrifuged for 30 minutes and the supernatant plasma decanted.
- (2) 25 cc. of sterile distilled water was added, mixed thoroughly, again centrifuged for 30 minutes and decanted.
- (3) step (2) was repeated.
- (4) 2 cc. of 15 per cent sulphuric acid was added and the tube shaken, centrifuged, and decanted.
- (5) 25 cc. of sterile distilled water was added, mixed, centrifuged and decanted as above.

The resulting sediment was suspended in a small quantity of distilled water and injected subcutaneously into the groin of a guinea pig.

All guinea pigs gave a negative reaction to tuberculin intradermally at the time of injection. A total of 48 guinea pigs were injected, divided into 24 pairs. Guinea pigs were sacrificed and necropsied after 1 to 4 months and the presence of tuberculosis evaluated on the basis of the typical gross and microscopic findings of injection tuberculosis, confirmed by positive intradermal tuberculin reaction and stains for tubercle bacilli. Blood was drawn daily except Sunday, for four weeks. The extent of the tuberculosis found grossly in the guinea pigs was graded on a basis of 1 plus to 4 plus, which was considered to give a rough measure of the number of bacilli present in the particular blood sample. The results are tabulated in table I.

TABLE 1
EXTENT OF TB. IN G. PIGS INJECTED WITH:

DATE	WHOLE BLOOD	LOEWENSTEIN SEDIMENT
April		
6 -----	dog injected with suspension of tubercle bacilli	
8 -----	3+	3+
11 -----	2+	1+
12 -----	2+	0
13 -----	3+	0
14 -----	4+	0
15 -----	2+	0
16 -----	2+	0
18 -----	0	0
19 -----	0	0
20 -----	3+	1+
21 -----	2+	0
22 -----	0	2+
25 -----	2+	0
26 -----	0	0
27 -----	0	0
28 -----	2+	0
29 -----	0	0
30 -----	0	0
May		
2 -----	0	0
3 -----	0	0
4 -----	0	0
5 -----	2+	0
6 -----	0	0
7 -----	0	0

RESULTS

Of the guinea pigs directly injected with the whole blood, 12 of 24 showed tuberculosis graded from 2 plus to 4 plus. The guinea pigs injected with a sediment of blood concentrated by the Loewenstein method showed tuberculosis graded from 1 plus to 3 plus, in 4 of 24 guinea pigs. One guinea pig died of intercurrent infection in less than one month after injection and therefore cannot be positively classified as negative, although the corresponding animal injected with whole blood showed no tuberculosis.

In 8 specimens of 24 the whole blood injection method detected tubercle bacilli which were not demonstrated by the injection of sediment from the blood sample treated by the Loewenstein method.

In 1 specimen of 24 the Loewenstein method showed the presence of tubercle bacilli not detected by the injection of whole blood.

In 3 specimens, the tuberculosis was more extensive in the guinea pig injected with whole blood.

DISCUSSION AND CONCLUSIONS

Using an equal volume of blood, direct injection

of whole blood into guinea pigs was about three times as sensitive in detecting tubercle bacilli as was injection of the sediment after treatment by the Loewenstein method. It may be significant that the numerical difference in sensitivity of the two methods is the same as the number of washings and centrifugings. If the volume for concentration were three times as great as that for direct injection, one might expect approximately equal results. It was impracticable to test this theory however, because of the large amount of blood necessary.

The inference is strong that the loss of tubercle bacilli occurs in the washing and centrifuging, and the reduction in number of bacilli is directly proportional to the number of washings. This would tend to confirm the suggestion of Saenz, Costil and Sadettin⁴ previously mentioned. It is of interest that Schwabacher⁶ has been able to culture tubercle bacilli in about equal numbers from the supernatant plasma and from the sediment in blood from tuberculous animals treated by the Loewenstein method.

It may be concluded that the volume of the blood sample is the chief factor in determining whether concentration methods may be advantageous in a given case. In order to show any advantage for concentration methods, a blood sample of 20 cc. or greater would be necessary.

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GEORGE BEN JOHNSTON AND LISTERISM*

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In March, 1879, Listerism—the so-called newborn science of modern surgery—received its introduction to the Virginia medical profession. Its arrival was unheralded. It came suddenly, without fanfare, or benefit of general professional acclaim. Quite the contrary. Among Richmond operators, the lone sponsor of Listerism in that earliest, portentous hour was Dr. George Ben Johnston, an enterprising young newcomer from Southwest Virginia.

He was twenty-five years old, and had lived in Richmond less than a year, having moved here after one notably successful year of country medical and surgical practice in and around the town of Abingdon.

Listerism was a bold departure. Its pioneer technique was awkward, time-consuming—to some, even laughable; but to the keen mind of his first Virginia partisan the great English surgeon had built soundly, inescapably, upon “the germ theory of putrefaction”, as laid down in 1857 by the French chemist, Louis Pasteur. Listerism in Virginia would shake the whole citadel of Confederate medicine and surgery. Its fearless and devoted adoption by an unknown youngster from the provinces would not endear him to his established colleagues. In the new Dr. Johnston, these conservatives had also to reckon with the most formidable personal charm, the most brilliant mind and magnetic spirit to enter their profession in many days.

Richmond was not alone in its reluctance to follow the new star of Joseph Lister's troublesome antiseptic method. This was long before a modest man, late of Edinburg, was named “Lord Lister” by his grateful Queen. Eighteen-seventy-nine was only a dozen years from Lister's first epochal report of a small series of compound fractures—13 cases in 18 months—with only two deaths and two cases of “hospital gangrene”, both of which recovered. It was only nine years since Saxtorph, Professor of Surgery in the University of Copenhagen, gave his first “outside testimony” to Lister's antiseptic system. It was less than three years since Von Nuss-

baum in Munich, having transformed the appalling conditions of his State-hospital there by “the sternest and minutest Listerian regime” had published his tribute to “Lister's Great Discovery”; this, the first statistical proof of the results of antiseptis, appeared in the *German Journal of Surgery* for October, 1876. Richmond, like Joseph Lister's native London, like many medical centers here and abroad, was largely unmoved—or frankly hostile to the “turning-point in all surgery”. Recent political miseries of Reconstruction, and the ghastly glories of Confederate surgical defeats were of greater moment still—to many surgeons, if not to their patients.

But, thanks to Dr. George Ben Johnston, Virginia ranks well in American surgical history. The year 1879, in which Dr. Johnston became our pioneer “dispenser of the benefits of antiseptic surgery”, is also well known in medical annals as “the decisive year in the history of Listerism”. It is the year “from which the final acceptance of the antiseptic system may be dated”; the year of Lister's first great international triumph, his reception at Amsterdam “with an enthusiasm that knew no bounds” by the triennial International Congress of Medical Science. Working in another world, with equal enthusiasm and inspired confidence, with a passion for truth and a genius for leadership, young George Ben Johnston had brilliantly placed his native State in the van of revolutionizing medical progress.

Dr. Johnston's early assumption of a great pre-eminence was no accident. His prompt grasp of the profound significance of Lister's work was characteristic of his own intellectual calibre. It evidenced in him the flowering of a long and noble heritage, from men and women of courage and able minds. He stood on the threshold of his great career endowed with many gifts, not the least of them the blood of illustrious forbears quickening his own.

Back to the thirteenth century, to a Scottish town on the English border, goes the authentic record of “the brave and powerful Johnstone family”. Back to Sir John de Johnstone, Marquis of Annandale and Lochwood Castle, whose resounding title, “Warden of the West Marches” was given him by the

*Revision of presidential address before the Tri-State Medical Association of the Carolinas and Virginia, published in *Southern Medicine and Surgery*, March, 1944.

king of Scotland. Sir John's broadly defined duties were simply "to defend Scotland against the inroads of the English". For 400 years, from that doughty warrior, his Scottish line is studded with Johnston soldiers, scholars and—always—patriots. Finally, in 1727, his descendant Peter Johnston, an able and interesting young man of the Annandale family, emigrated to Virginia. At home he had a friend named Walter Scott, whose namesake would some day write the Waverly Novels.

In Virginia, where he had settled first on the lower James River, the first Johnston grew rich and prominent in the merchandising trade. He married late, and moved up-country to Prince Edward County. His home, near the town of Farmville, is known today as "Longwood"—or the Farmville Country Club. But Peter Johnston's great-grandson surmised in writing his family annals that the name was "a corruption for 'Lochwood'," the ancestral 13th Century Castle left behind in the West Marches of Scotland. Besides a notable posterity, Peter Johnston's enduring monument is Hampden-Sydney College to whose founders he gave one hundred acres of land on which to build it. He was progenitor of many distinguished Virginians, none worthier of their country's honor than the courageous great-great-grandson whose pioneer service to Southern surgery I present to you today.

In the three intervening generations of Dr. Johnston's direct line in the Cincinnati Society stands first, Judge Peter Johnston son of the immigrant. Born in 1765, he is the family hero of the American Revolution, the "blue-eyed, curly headed boy" of intrepid courage and patriotism, who slipped away from Hampden-Sydney—pursued in vain by parental and college authorities—to become a lieutenant in "Lee's Legion" at sixteen. His company ranks included the legendary Virginia giant, Peter Francisco. After the war Captain Johnston became a distinguished lawyer, orator, statesman. He was an ardent follower of Jefferson and Madison, the "Great Republicans", as democrats of their day were called; and in 1788 he married Miss Mary Wood, a niece of Patrick Henry. As Speaker of the Virginia Legislature he helped notably to pass the famous Resolutions of 1789. In fact, Mr. Johnston's speech in favor of The Resolutions was deemed so good it was published in *Niles Register*, the leading magazine in America. In 1810 Peter Johnston was elected a judge of the General Court. But he exchanged

circuits with his friend, Judge Brockenbrough, who "preferred to stay East", and moved to Abingdon. Thus the Johnston family became identified with Southwest Virginia.

Dr. John Warfield Johnston, born in 1790, oldest son of Judge Johnston and future grandfather of the great modern surgeon, was himself a young man of great abilities and promise, and also, it is said "of charming manners and temper". To study medicine, his father sent him to Philadelphia, considered then the finest medical school in America. He returned to practice in Abingdon; and married Miss Louisa Smith Bowen of Tazewell County. But the diary of his son relates that "he died before he was 28 and yet, in that short period, he had acquired a reputation equal to that of a successful practitioner of fifty". He died for others, victim of "an epidemic disease then very fatal in the country", which he contracted while attending his stricken neighbors.

The second John Warfield Johnston, who became the father of George Ben Johnston, also grew up in Tazewell County, Virginia. At 8 he entered Abingdon Academy, where for six years he says, "I distinguished myself more as a bandy-player than any other way." At 15, he rode horseback 350 miles to enter South Carolina College at Columbia. Afterwards, he studied law at the University of Virginia and, on October 12, 1841, he happily married Miss Nicketti Buchanan Floyd, daughter of the ex-Governor of Virginia. The young couple began life in Jeffersonville. From Commonwealth's Attorney "at the magnificent salary of \$100 a year", Mr. Johnston rose rapidly to State Senator, and local Bank President, to leading lawyer and outstanding citizen of that region. After the War Between the States he was one of the two first representatives from Virginia to be re-admitted to the United States Senate. He was re-elected twice, and states quietly that "it has always been a source of great satisfaction to me, that in all three elections, I never lost one vote in my own section of the State—the great Southwest. I uniformly received every vote, west of Lynchburg."

Mrs. Nicketti Floyd Johnston, had two older brothers of already distinguished names. They were George Rogers Clark and Benjamin Rush Floyd; and for them her third son and seventh child would be named "George Benjamin" at Jeffersonville, on July 25, 1853. Mistress Johnston's own odd Christian name bore no reference to the bold Indian blood

claimed proudly by her father. But, as she could tell you, names were scarce when the youngest of twelve, and a seventh girl, was born in Burkes Garden in 1819. One day a great friend of her father's came magnificently to their home; an Indian, of un-savage bearing, who stopped near her cradle.

"Nicketti-nicketti—" he said gently, which, being interpreted, means "pretty baby" . . . and thus a new Floyd-family name was coined.

Of the young lady herself, her husband's record states proudly that "her appearance was very striking. Her hair, then a very dark brown, curled naturally and was worn in ringlets. . . ." A country girl, she could ride and shoot well and fearlessly; she also knew and loved the beauties of her noble countryside. She was gay and "sympathetic" and charming and deeply spiritual. And she had a way of nursing the sick ". . . walking a mile out of town . . . to sit up all night—night after night—with a sick family." Later, during the war years, she "devoted several rooms to a hospital for sick soldiers". We see a small eager boy, who loved his mother, deeply impressed by the hospital in his own home, and by her ministry to and interest in the victims of disease and wounds.

Mrs. Johnston's flair for helping sick people was already inherited. Her father, Dr. John Floyd, twice Governor of Virginia, had begun his medical studies in Louisville in 1802 with a Dr. Ferguson of that city. Three years later he went to Philadelphia to complete his training under a greater teacher. Besides his vast practice and constant "lecturing", Dr. Benjamin Rush of the University of Pennsylvania had found time to be a statesman. John Floyd's career would emulate that of his famous preceptor. During the War of 1812 he left his already large practice to serve as surgeon in the Army. Returning, he settled at Thorn Spring in Montgomery County, and from there "for his prominence and abilities" he was elected to Congress. He served continuously for 18 years. In 1828, the unhappy year of "Nat Turner's" dark fame, Dr. Floyd became Governor of Virginia. For his wise and able handling of that grievous business, he was returned to office. It is written of Dr. Johnston's grandfather that he "was a remarkable man in all respects. . . . As a Doctor he had no superior, and as a public man was most conspicuous, during a period very fertile of great men."

But by far the most colorful career in our great

surgeon's tremendous heritage was his maternal great-grandfather, the first John Floyd. He was second of his name in the New World—his father, William Floyd, having emigrated from Wales to the Eastern Shore of Virginia. John Floyd was born in 1751 in the "wild region" of Amherst, Virginia. From his Indian maternal grandmother this bold and virile pioneer inherited useful traits for the life of violence and adventure that lay ahead. He married first at 18, but his wife died in childbirth. The bereaved infant daughter was duly named "Mourning" Floyd. Briefly, thereafter, John Floyd became a school-teacher and writer in a surveyor's office. In 1775 he visited and surveyed a great tract of lands in Kentucky, whence he returned safely "after unparalleled suffering", and shortly afterwards won the promise of beautiful Miss Jane Buchanan. But a war intervened. As skipper of the Privateer *Phoenix*, returning with a rich prize from the West Indies, John Floyd was captured during the Revolution by a British warship. He was put in irons and imprisoned in London; but the jailor's daughter helped him escape. In Paris, where the refugee had barely survived an attack of smallpox, the American Minister, Dr. Benjamin Franklin saw him safely off to the United States. With a scarlet wedding-coat, and silver shoe-buckles for his betrothed, he got back in time to marry her—the day before she, thinking him lost, would have wed his rival! In 1779, taking his family, Col. John Floyd led a group of Virginia pioneers to settle a vast principality in the little-known "dark and bloody land" of Kentucky. The place was named Floyd's Station, and the lands are now a part of the city of Louisville. In his own words he had "set foot upon the threshold of an empire". A giant in strength and courage, Col. Floyd survived many personal encounters with the Indians. But he lost his life, wearing his scarlet coat through the forest near Louisville, in 1783. His third son, John, the little Kentucky-born future governor of Virginia, began life 12 days after his father's death.

This survey of Dr. George Ben Johnston's direct lineal ancestry is vital to our study of the man himself, and his great contribution. We find the pattern of his brilliant personality set in noble fabric. His keenness of intellect, his extraordinary abilities, his integrity, courage and enterprise, besides his compassionate interest in human suffering, and a vital concern for the public good—all these fine

qualities were his by inheritance. They were "in his blood", uniquely his own like the bright curling hair that framed a splendid brow, like the powerful physique of the best wrestler at Abingdon Academy, where his father was the outstanding "bandy-player" years before him.

As a boy Ben Johnston was "a fair student", not so good as his elder brother Willie. But Willie, who was lamentably drowned during their first college year together in Wheeling, West Virginia, was "Confessedly the best scholar; and the best, the Professors said, they ever had." After two years at St. Vincent's, also known as "Bishop Whelan's School", Ben took the collegiate course at the University of Virginia; and for one year there his father "put him to the study of the law". But "he did not take kindly to it, and indicated a very strong inclination to medicine". Seventy years later, Dr. Johnston's sister remembers that "he did try to study law to please his father, but he always wanted to be a doctor—and a good thing too!" Once in medicine, the young man hit his stride as a student. "At the end of the session", writes his father, "he was elected Final President of the society to which he belonged—the highest honor and greatest compliment the students can pay a fellow-student."

From the University of Virginia Ben Johnston went for his final year of medical study to the Medical College of the City of New York. He received his degree there in 1876.

Interesting is the visit of Joseph Lister to Philadelphia and New York in that same year. Did his coming focus the fertile mind of his first Virginia follower on the great Englishman's enormous discovery? Was young Johnston present, that October day at the Charity Hospital in New York, to see and hear for himself an address entitled "The Antiseptic Treatment of Open Wounds?" If he was not there in person, certainly many of his former fellow-students did attend that momentous presentation, or the one in Philadelphia on "Antiseptic Surgery"; so we may be sure that the future Richmond surgeon was directly influenced by the founder of Listerism. The great new word fell on good ground in the receptive mind of George Ben Johnston. In an amazingly short time it would bring forth its fruit there, an hundred-fold.

If all operators may be judged by their "end results", the earliest surgical work of Dr. George Ben Johnston, without a fatality during his first year

of practice, is an impressive record. I quote his father:

"He only remained in Abingdon a little over a year, but in that short time acquired a great reputation as a surgeon. The principal operations performed by him were: one in Russell County upon a man who had suffered for some years with an obstruction in the throat; this Ben removed and the man got well. The other was the amputation of both legs of a brakeman whose feet had been mashed in an accident and who also got well."

In 1877 Dr. Johnston's decision to move to Richmond was heartily endorsed by his parents, "as giving him a better and larger field for the talents they believed him to possess". They recognized the early evidence of his genius and fostered it. Already his father's advice had proved the turning-point of a noble life. After graduating in medicine Ben Johnston received two attractive offers, one to settle in New York, one in Philadelphia. With filial affection and respect he consulted his father.

"Virginia needs her sons," said Senator Johnston, "You should come home to practice your profession."

Now, at the State Capital, the Virginia profession of medicine witnessed a strange and perhaps not too welcome phenomenon—the immediate, startling success of a new arrival: a full-fledged master surgeon, suddenly taking his place in their front ranks. He had not come gradually into surgical prominence from years of urban general practice. Within a single year he had fearlessly and firmly established himself as a master in the art and practice of modern surgery.

In later years Dr. Johnston admitted that he had decided never to let himself be known as "the young doctor". Youth, he knew, was no asset to a surgeon opening his practice in a strange competitive city. But a surer key to Dr. George Ben Johnston's instant and singular success was his masterly comprehension and meticulous application of the new phrase, "antiseptic surgery".

One spring evening in March, 1879, Dr. Johnston told his mother and sisters that he had a very serious operation to perform the next day, for the first time, and he wanted them to be praying for him. At eleven o'clock next morning, Mrs. Johnston and her daughters knelt devoutly at home, with their rosaries; for them, the beads slipping through their reverent fingers were symbols of sterner instruments in the skilled hands for which they prayed.

Meanwhile, at some antique Richmond hospital, with strict new Listerian antiseptics, Dr. Johnston was successfully removing an ovarian tumor weighing forty-five pounds. His one approving friend and assistant that historic morning was his kinsman, Dr. Frank Cunningham, whose name alone shares this bright page of Virginia surgical annals with Dr. Johnston's. The patient recovered without infection; and the news of that miracle, and of others that followed it, spread rapidly through the state and nation, as the marvelous skill of Dr. George Ben Johnston became a by-word in Richmond, Virginia.

On October 12, 1880, at home in Abingdon, he married Miss Mary McClung, "a sweet and lovable young lady", from Tennessee. But in less than a year she was dead of typhoid fever. "After her death", writes his father, "he went home with me to Eggleston and spent some time"—poignant inference to shock and sorrow. But soon Dr. Johnston had steadied his fine heart, and turned back to his active and growing surgical practice in Richmond.

Twelve years later he married Miss Helen Coles Rutherford of Rock Castle, Virginia. She was a charming girl, of distinguished heritage, and with her he now entered upon a lifetime of private happiness in a home of princely hospitality.

Even in the spacious days of "Old Richmond's" happy and leisurely social life in the nineties, the Johnstons' home at 407 East Grace Street was noted. It was famous always for the grace and charm of its host and hostess, and for the constantly recurring groups of distinguished guests who gathered there. Fabulous stories of Mrs. Johnston's matchless "table" live on through sterner times. Her wit and sparkling conversation were never over-shadowed by her brilliant husband. She amused and delighted him; for he knew and shared her vital interest in all the arts of living well and graciously.

The years passed busy and work-filled. In 1885 he had been elected Professor of Anatomy at the Medical College of Virginia. In 1888 he resigned at the end of the session, "finding that the duties of his place interfered too much with his practice". But Dr. Johnston's earliest affiliations with the Medical College of Virginia were but straws in the wind of a life-long devotion to and ennobling influence upon medical education. It is interesting that in 1893 he was made Professor of Didactic and Clinical Surgery, but accepted the appointment only "on

condition that a properly equipped teaching hospital under the control of the College be established". The first hospital, therefore, that owed its existence to Dr. George Ben Johnston was The Old Dominion Hospital, adjacent to the ancient Egyptian Building of the Medical College in Richmond. It was the first modern "teaching hospital" ever established in Richmond.

Dr. Johnston's surgical work in the '90's and early 1900's commands our full respect today. I present to you one series: a report of three cases of cancer of the cervix complicated by pregnancy. All cases were beyond the fourth month; on two of them he did a pan-hysterectomy on recognition. The third case was allowed to go to term. A live baby was delivered by Caesarean section, and a complete hysterectomy was done. All three cases had complete operative recovery, and the follow-up showed them to be cures. With all our improved surgical procedures few of us today would under-estimate the magnitude of this type of surgery.

Within one five-months' period during the same decade, a report from the Old Dominion Hospital shows that Dr. Johnston performed 71 abdominal operations there. They were: 18 appendectomies, 7 appendiceal abscesses, 2 nephrectomies, 1 nephrotomy, 4 operations for hernia, 3 of them double, 8 salpingo-oophorectomies, 1 hepatotomy for abscess, 12 hysterectomies, 1 exploration of tuberculous peritonitis. There were only two deaths in this series; one of them in a case of suppurating appendicitis, the other in tuberculous peritonitis.

A partial bibliography of Dr. Johnston's reported work during this period includes the following titles: Gastrostomy for Traumatic Stricture of the Esophagus, Report of Case, (1890), Report of Two Successful Nephrectomies (1890), Imperforation of the Rectum (1891), On Movable Kidney (1894), Diagnosis and Treatment of Cholelithiasis (1895), Splitting the Capsule for the Relief of Nephralgia (1896), Comparative Frequency of Stone in the Bladder in the White and Negro Races (1896), Acquired Umbilical Hernia in Adults (1897), Symptoms and Treatment of Hepatic Abscess, with Report of 17 Cases (1897), Retro-perineal Fibrolipoma, Some Abdominal Cases (1898), Progress of Renal Surgery (1898), The Limitations of Conservative Surgery of the Female Generative Organs (1899), Report of a Case of Uretoro-ureteral Anastomosis (1902), A Case of Bilateral Diffuse Virginal

Hypertrophy of the Breast (1903), A Case of Uterus Dydelphus (1904).

The scope of Dr. Johnston's practice is indicated by such reports; his brilliant discussions on the work of other surgeons shed further light on an immense versatility. In discussions before the Southern Surgical and Gynecological Association, alone, he is recorded on "appendicitis", "aseptic surgical technique", "cholelithiasis", "recto-vaginal fistula", "splenectomy", "fibroid tumors of the uterus", "ovarian cyst", "post-operative complications in abdominal surgery", "prolapse of the rectum in women", "surgery of the bladder".

We may also remember that in this fertile period of a great career, "general surgery" included many operations now the province of the consulting specialist. Besides his tremendous work in abdominal surgery and gynecology, Dr. Johnston was long his own orthopedist, his own neurological surgeon.

In all Dr. Johnston's forthright opinion recorded for us on the current surgical problems of his day, we note an interesting fact. It is a proof of his genius. Rarely, if ever, had he cause to reverse himself. He was consistently *right*, as in his pioneer work in asepsis, from his earliest words on the fundamentals of modern surgery. Many of his statements, daring and provocative when he made them, are axiomatic today: "The essential thing is the proper preparation of the patient preceding operation." "The minimal amount of the anesthetic agent and briefest possible time in administering it." "In regard to complications, the most important thing is prompt recognition of them . . . they must be quickly diagnosticated and energetically treated." "Among all practitioners, for any bowel trouble in very young children they try to clean out the bowels with a dose of oil. I look upon this as a pernicious practice . . . and I think it is our duty to preach a crusade against purgation in acute abdominal conditions." "In my experience (with Dilatation of the Stomach) . . . after the first thorough lavage the slightest amount of vomiting is an indication for second stomach-washing, and this should be continued as long as there is any vomiting." "The treatment should be governed not so much by ourselves as by the action and condition of the patient." "Surgical daring is a matter of the *when* and not the *what*."

These are the pronouncements of a wise philosopher, and thoughtful man, who was also a master

clinician.

In a discussion of a paper on "Aseptic Surgical Technique" in 1895, Dr. Johnston said, "I am convinced along with Dr. McMurtrie that the greatest source of danger to the patient is through the surgeon and his assistants." In his own paper on "Movable Kidney" that year he concludes, "Nephrorraphy is not indicated in every case of dislocated kidney, but only in such cases as manifest distressing symptoms."

Notably discerning is Dr. Johnston's discussion, also in 1895, of appendicitis in the Negro. He observes that when the Negro is eating in his master's kitchen, appendicitis is common. When he is living in the rough he has no digestive disturbances and appendicitis is infrequent. And, more seriously, "Negroes are mostly in the hands of less capable practitioners of their own race; therefore, they do not get as good medical attention as whites, and many cases of appendicitis in the Negro are overlooked."

In 1896, at the ninth annual meeting of the Southern Surgical Society and the year he was elected president of that body, Dr. Johnston discussed appendicitis. He said, "Every case of acute appendicitis should be operated on as soon as the diagnosis is made, during the first 48 hours. After 48 hours, one should be governed by the severity of the disease and the general condition of the patient. If an abscess has developed, drain the abscess but make no effort to remove the appendix, unless it is in the operative field." We should do well to follow this advice today.

"A physician", he adds, "in my opinion has but one duty in the matter of dealing with appendicitis, and that is to call in a surgeon of experience and not undertake to treat cases medically."

As tenth President of the Southern Surgical Society in 1897, Dr. Johnston selected for his presidential topic "The Prevalence of Specialism and Who Shall Be Specialists". In a brilliant analysis, he divides the specialists of his day into two classes, the true and the pseudo-specialists. The true specialist is a man especially distinguished for his learning and skill in a given pursuit. The false, is one having merely a special occupation. Dr. Johnston firmly believed that a specialist should be a doctor of real learning, a man of broad medical education, who should be able to discuss medicine and surgery intelligently when called in consulta-

tion. Above all, he must have proved himself efficient in the practice of medicine. The author had in mind the giants of his profession in that day; men who were "broad, learned and wise, owning a mine of experience which fitted them for the high calling of 'specialist'." "To fix the standard and lay the proper requirement for specialism, the colleges and societies must act," added Dr. Johnston. ". . . that the public may know the specialist is sanctioned by a proper body qualified to judge his fitness to execute the work he seeks." Fifty years later, there is evidence that Dr. Johnston's timely discussion of specialism had a beneficent influence on the course of our profession.

With the turn of the century, Dr. Johnston's nation-wide fame was already immense. At fifty-one he was elected President of the American Surgical Society, and he already seems to have received every honor in the gift of his profession in the United States. His local, State and Tri-State medical societies, the Southern Surgical Association, the American Surgical all conferred on him their highest offices. As invited guest he appeared on distinguished programs of surgical societies as far apart as Boston and the Mississippi Valley. He was the beloved and honored friend, and peer of the leading men of his day, ever welcomed into the hierarchy of the great in surgery.

Even so, Dr. Johnston's chief influence on the medical profession stemmed from his constant interest in and loyalty to the welfare of his home city and its medical institutions. In 1903, the year of his election to the International Surgical Society, he secured from his friend, Mr. John L. Williams, of Richmond, a memorial gift of \$200,000 to found an adequate teaching hospital for charitable purposes, in connection with the Medical College of Virginia. For many years, the Memorial Hospital was the finest in the south, a model of all that was newest and best in modern clinical facilities. Dr. Johnston was also instrumental in founding Richmond's excellent hospital for negroes, St. Phillips.

Dr. Johnston's lifelong service to the Medical College of Virginia is worth recalling to every alumnus of that institution. Prior to 1893 the medical school offered only a two-year course; it had no hospital; and not more than three clinics a week were held; these were mostly "walking cases" from the Dispensary. In that year, thanks to Dr. Johnston's refusal to accept a chair in surgery there un-

less better clinical facilities were provided, ours became the first medical school in Virginia to offer and require four years of medical study for a degree. From then on, Dr. Johnston always insisted upon the highest possible standards both in the teaching services and in equipment for the Medical College. He secured a State appropriation for it from the Legislature, and ever afterwards successfully defended that appropriation against all comers. Certainly he was no orator; his voice was rather too high-pitched, and lacking in resonance, but when Dr. Johnston rose to speak before any assembly, scientific or otherwise, his arguments were more than convincing; they were unanswerable. His words carried authority as the eloquence of few men could do. When he differed from his opposer in a discussion, he spoke with a gracious formality, an urbane courtesy that only enhanced the cutting irony and convincing logic of his argument. So the records prove that whoever brooked the self-less force of Dr. George Ben Johnston's tremendous energies in behalf of medical education in Virginia, they always did so at their peril.

In 1903, as chairman of the Legislative Committee of the Medical Society of Virginia, he sponsored the first Virginia statute governing medical practice—a law so far-seeing and effective against charlatanism that it has required few amendments during the past forty years.

But, with his keen wit and ready interest in public affairs, his championship of truth and fair play, medical politics was not the only realm that felt Dr. Johnston's fine, energizing hand. In a long-dead but ardently waged struggle between two distinguished Virginia politicians, the issue is said to have been decided in favor of the incumbent by *A Fable*, written, printed and circulated in behalf of Senator Thomas S. Martin by a well-known Richmond surgeon! I commend to you "The Fable of The Martin and The Woodpecker" as a masterly bit of strategic satire, and a fine example of its author's wit and wisdom.

Today in Richmond more than one outstanding physician or surgeon began his success with Dr. George Ben Johnston. In the quarter-century since his death, other accredited private hospitals here besides his own have been staffed by men brought here and trained for surgical leadership by Dr. Johnston. This is an important index to a noble and generous character. No motive of self-interest

impelled him to such a task; he had nothing to gain by it. He simply saw the need for more and better-trained doctors in his community of the future, in a world he would not live to serve.

His life-long interest in young men was beautiful, and rare in a great and busy surgeon. He delighted in training them; and the beginning of that training was never easy. It did not take the Chief Surgeon long to decide an interne's fate. He knew rather promptly whether you were just "run of mine" or an interne with potentialities for advanced training. Once having selected his young men, he believed in them so firmly that he soon put real responsibility on them, and backed them to the limit in that responsibility. It was hard to fail him. But woe be unto him who did not measure up to that trust!

Dr. Johnston felt that every young surgeon should have a strong foundation in medicine. He encouraged them always to spend some time, a few months at least, in the actual rigors of country medical practice, before devoting themselves to surgery. He often arranged for such temporary apprenticeships with some member of his wide circle of referring physicians. So begins many a cherished tale of youthful hardihood "in the country" as survived by Dr. Johnston's urban followers.

As a clinical teacher, Dr. Johnston had an uncanny ability to bring out the essentials and to place little emphasis on the negative findings. He went into the greatest detail in discussing his cases before, during and after operation. He was a great surgeon, a smooth operator, a dissector with few equals. And always, for any operation, there was the greatest dignity in his operating room. If there was a discussion, he led the discussion and he closed it. He was never in a hurry during an operation. Nor was he time-consuming, and he always operated with little lost motion. He wanted his assistants to anticipate every move; otherwise, he felt them to be a liability.

His most promising follower, the "assistant" whose name is linked in surgical history with Dr. Johnston's was my distinguished preceptor, the late Dr. A. Murat Willis. The partnership between these two brilliant and gifted men was happy and productive. Together, with a great clientele, they did much original work, including the well-known operation which they devised and perfected jointly, the Johnston-Willis suspension of the uterus. To-

gether in 1909 they founded the Johnston-Willis Hospital in Richmond, located then at Sixth and Franklin Streets. Three other excellent Southern hospitals today owe their existence to the far-flung vision and enterprise of Dr. Johnston and his able young partner, Dr. Murat Willis. These institutions are the George Ben Johnston Memorial Hospital in Abingdon, Virginia, the Park View Hospital in Rocky Mount, North Carolina, and the Nassawadox Memorial Hospital on the Eastern Shore of Virginia.

Dr. Johnston's presidential address before the American Surgical Association was entitled "*A Sketch of Dr. John Peter Mettauer of Virginia*." It was typical of his passion for truth and justice, that Dr. Johnston should determine to bring before the leading surgeons of America the accomplishment of this great Southern pioneer in surgery, the man who—perhaps because he was a Southerner—had been sadly neglected or forgotten by his surgical beneficiaries. Dr. Mettauer of Prince Edward County was also a neighbor of Dr. Johnston's family some three generations back, so this writing satisfied another leading trait of the essayist: his devoted loyalty to places and people.

In his own words, Dr. Johnston presents Mettauer "in the staring black and white of simple truth . . . as one of the builders of that foundation which has made the present superstructure of medicine a possibility." He points to Mettauer's great surgical skill—"marvelous for his day and well-nigh marvelous for any day"—and, lapsing for a moment into poetic metaphor, he recalls how that great man's reputation, "growing as his fame, was spread in widening circles on the sea of human misery." But the crux of this "biography" re-established the fact that in 1838 Dr. Mettauer was the first American surgeon to cure vesico-vaginal fistula with lead-wire sutures, thus antedating Dr. Marion Sims's accepted claim to priority by many years. In 1833, Dr. Mettauer had already accomplished the repair of recto-vaginal fistula, using lead-wire. Dr. Johnston also stated that Dr. Mettauer's operation for cleft-palate was the first in the western world. And I am sure Dr. Johnston would heartily applaud Dr. M. Pierce Rucker who has lately published an original excellent work on Mettauer. Dr. Rucker concludes strongly that Sims must have been familiar with Mettauer's report in the *Boston Medical & Surgical Journal* of 1840; but Sims failed to acknowledge

that priority. Twelve years later, Rucker states, Sims ignored Mettauer's published work, dismissing the success of the first American user of the silver catheter and metal suture, to claim that signal historic honor for his own.

No man ever had more staunch friends than Dr. Johnston. In every walk of life, from his honored colleagues in all professions to his white cobbler and his negro office girl, all his people loved him with a worshipful attachment. He returned their affection. Particularly, his patients loved and admired him.

From certain doctors today we often hear this remark, "I see patients only at certain hours, only at my office." This was not Dr. Johnston's method of ministering to the sick. I have heard him say, and I know it to be true, that he never turned down a call, from rich or poor, from white or black. He always said that when he got to the point of not looking after his charity practice, he would retire. With such a spirit and such an example before us, there was no place or need for "State medicine" in that day.

No surgeon ever lived closer to the Golden Rule than Dr. Johnston.

But with all his lovable and winsome qualities, he was a man of strong convictions, and utterly fearless in expressing them. I think his pioneer spirit enjoyed opposition; for he did not believe in straddling fences; he was not to be found on both sides of any question. If ever his misguided opponents presented an argument not based on clear facts and simple truth, they were hard pressed from the beginning! In all issues it soon appeared where Dr. Johnston stood. And there he stood four-square. Particularly if the "question" concerned his friend—and if he felt his friend's cause was just, he seemed to revel in the contest. He was willing to go all the way for his friends. On the other hand, it was hard for a man to be "all things to all people" and still keep Dr. Johnston's respect and friendship. Against the rock of that clear-eyed, affirmative integrity, such a man would surely fall.

Notable tributes to Dr. George Ben Johnston are already on record; they tell the magnitude of his life and work, and the singular charm of his rare personality. Dr. Beverley R. Tucker and more recently Dr. J. Morrison Hutcheson have done him honor. There is also a just eulogy by his friend, the late W. Gordon McCabe of Richmond. To all

these, I would add my personal tribute.

I remember well Dr. Johnston's striking appearance, for he was the handsomest man we knew. His hair and mustache had grown white, but his fine high-colored face was never old. He had a lofty forehead, keen brown eyes and noble features; with a smile that won and held his friends. I remember his impressive, though modest bearing; his great physical strength, and the beauty and power of his hands. I remember the warmth of his most casual greeting, and his immediate, unfeigned interest in every human being. I remember also the example of his faith and piety, and his devotion to the Church, and his courageous Christian fortitude to the last.

As his interne and resident I was privileged to spend much time with Dr. Johnston. And on two occasions, during the last years of his life, I became his traveling companion. Always such a journey was like a royal pilgrimage. Wherever he stopped, at the Mayo Clinic, in New York, Chicago, or Philadelphia, or as guest of Mr. Wilson in the White House, Dr. Johnston was the center of attraction in every gathering. He had something men liked. They delighted in him for it, although it was a quality that evades a name. They only felt the charm of an amazing yet understanding mind, of a heart's natural warmth, a geniality and courtly graciousness rarely met. Equally impressive and characteristic of him to me was his courteous consideration of his young companion. Wherever he went, however grand the function, he took me with him, with a tact and generosity impossible to describe or to forget.

When Dr. Johnston died, at 63, on December 20, 1916, he left no son to carry on his name. But his four beloved and loving daughters could always more than compensate him for such an omission of fate. Today his immortality goes on. There are 12 living grandchildren, of whom 7 are boys. In 1941, a brave and wonderfully handsome young man named George Ben Johnston Handy left his medical course at the University of Virginia to volunteer in the United States Army. He was killed on Bataan Peninsula in January, 1942, the first alumnus of V. M. I. to fall in this war, and a grandson of Dr. Johnston worthy of his illustrious name.

Dr. Johnston's own closing tribute to Mettauer is strangely applicable to the man we honor: "great he was . . . untiring, bold, resourceful, zealous, a

prodigy of his own age and a prophet of the time to come . . . a character so unique, picturesque and masterful, that if this presentation fail to interest you—*mihi defectus*—the fault is mine and not my subject's."

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The American Congress of Physical Therapy

Will hold its twenty-third annual scientific and clinical session on September 6-9, at the Hotel Statler, Cleveland. Annual instruction courses will be held in the mornings and the scientific and clinical sessions will be given on the remaining portions of these days and evenings. All of these sessions

will be open to the members of the regular medical profession and their qualified aids. This should be an especially interesting meeting as physical therapy plays an important part in rehabilitation which is so much in the spot light today. For information address the American Congress of Physical Therapy, 30 North Michigan Ave., Chicago 2, Ill.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE,
MEDICAL SOCIETY OF VIRGINIA

The patient was a thirty-one year old multipara who had had five previous normal deliveries. There was no prenatal care during the present pregnancy, and she was not seen by a physician until she had been in labor for two days. The physician was called on the second day of labor, when the membranes ruptured and the cord prolapsed. At the time of arrival of the physician the patient was found exhausted with a rapid pulse and a non-pulsating prolapsed cord. The cervix was three fingers dilated and thick. The patient was given morphine, gr. $\frac{1}{4}$, and sent to a hospital.

At the time of admission to the hospital, the patient seemed acutely ill and complained of severe abdominal pain. Temperature 97. Blood pressure 108. Respirations 28. A transverse presentation was diagnosed. One hour after admission a stillborn female infant was delivered by version and extraction under chloroform anesthesia. The placenta delivered spontaneously five minutes later. The version was done quickly and without difficulty. There were no lacerations and no excessive blood loss. Sulfathiazole was inserted in the cervix, and pituitrin and coramine given. The patient was in shock, and pantopon, glucose and oxygen were administered. She died three hours after delivery. No autopsy was performed and the cause of death is given as "obstetrical shock".

COMMENT

This case has been classified as a preventable obstetrical death because of the total absence of prenatal care and the failure to obtain medical attention during the first two days of labor. During this time the patient was attended by a midwife. Examination at the onset of labor would have shown the transverse presentation and the delivery could have been planned accordingly. The outcome for both the mother and baby in transverse presentation seems best when delivery is by Cesarean section, but this decision must be made and the operation performed just at or before the onset of labor. After labor has progressed, the membranes have ruptured, and an arm has prolapsed into the vagina, then the safe

period for abdominal delivery has long since passed, and the delivery must be accomplished through the vagina. Even the extraperitoneal types of Cesarean section are not well suited for the delivery of transverse presentations with a shoulder impacted in the superior strait of the pelvis, because of the difficulty in turning and delivering the child through the low extraperitoneal uterine incision. Internal Podalic version, followed by breech extraction after full cervical dilatation, is the method commonly employed for delivery of the transversely presenting child. If this can be accomplished before the membranes have ruptured or shortly thereafter, before all of the fluid has escaped, the version may be a reasonably simple procedure, while on the other hand if the amniotic fluid has escaped, and the uterus is tightly contracted around the child, version may be extremely difficult and hazardous. Under such circumstances where version is accomplished quickly and without difficulty, as in the present case under consideration, it may reasonably be assumed that the ease of the version was due to a rupture of the uterus. Version under these circumstances requires deep anesthesia for uterine relaxation, and occasionally when the child is dead, disarticulation of the prolapsed arm at the shoulder joint, makes the version somewhat less difficult. With a dead child, and a tightly contracted uterus, so that version seems too hazardous, decapitation should be done. Technically, decapitation too may offer considerable difficulties, but it is the procedure of choice in the so-called neglected transverse presentation; that is, dead child, cervix fully dilated, membranes ruptured, and uterus tightly contracted around the baby with a shoulder impacted in the pelvis and an arm prolapsed into or through the vagina.

In the present case the patient was obviously exhausted at the time of admission and quite likely the uterus was already ruptured at that time, as suggested by the severe abdominal pain, rapid weak pulse, and acutely ill appearance. Under these circumstances, fluids, glucose, sedatives, plasma and whole blood may have been of more value than immediate delivery. If the uterus was ruptured, which seems most likely, after the above preoperative prep-

arations, hysterectomy should have been performed. After the delivery by version and extraction, the presence of a rupture could have been determined by intrauterine palpation, with subsequent hysterectomy if uterine lacerations were present. Even with copious blood transfusions, sulfonamides and hysterectomy the mortality of uterine rupture during labor is quite high. If this patient had had competent

obstetrical attention in the latter weeks of pregnancy and at the onset of labor, the death would most likely have been prevented. While the course pursued after admission to the hospital may be seriously questioned (failure to first treat shock and to diagnose or rule out uterine rupture, and treat it if present), it is doubtful if a different course then would have appreciably altered the outcome.

MENTAL HYGIENE.

The Mental Hygiene Society of Virginia

Held its annual meeting at Roanoke on April 28th. The program was held at the Hotel Roanoke with Dr. Joseph E. Barrett, president, presiding and Dr. Howard R. Masters as program chairman. The annual meeting and luncheon was followed by a program on "Security and Rehabilitation in War Time", with the following participating:

Luther E. Woodward, Ph.D., Field Consultant, Rehabilitation Division, National Committee for Mental Hygiene, New York City.

Dr. O. B. Darden, Associate Professor of Neuropsychiatry, Medical College of Virginia.

William H. Stauffer, Ph.D., Commissioner of Public Welfare, Virginia Department of Public Welfare.

Captain Charles A. Spangler, MC., Army of the United States, Fort Eustis.

At 8 o'clock, the Society presented a general program with Dr. Barrett presiding. Lt. Commander Leslie B. Holman, MC., USNR., Naval Hospital, Portsmouth; Associate in Psychiatry, Johns Hopkins University Medical School, spoke on "The Adolescent During War Time".

Motion pictures were shown on "Psychiatry in Action" (sound picture on the rehabilitation of the psychiatric war casualties), and "Life Begins Again" (sound picture on the rehabilitation of men injured in industry).

Officers of this Society are: President, Dr. Joseph E. Barrett; vice-president, William Shands Meacham; secretary, Dr. Rex Blankinship; treasurer, James C. Faw; membership chairman, Dr. Joseph R. Blalock; finance chairman, Dr. R. Finley Gayle,

Jr.; legislative chairman, Dr. O. B. Darden; and executive secretary, F. W. Gwaltney. The Executive Committee is composed of Dr. Barrett, Mr. Faw, Dr. Blankinship, Dr. Gayle, Mr. Meacham, Dr. Howard R. Masters and Dr. J. J. Scherer.

The Mental Hygiene Society has, since its organization on February 19, 1937, pointed the way to a more adequate mental health program for our State. In the short space of its six years of history much thinking and planning has been done, and the achievements can be considered as remarkable, especially in the matter of securing suitable legislation and in some phases of organization. Enough legislation is now on the statute books to make it possible to carry out a most progressive mental hygiene program. It would seem to depend now on the desire and initiative of those who have it in their power to carry out the intents of these statutes; and on the resources both in the way of personnel, finances, and ideas which may be at their command. The adequacy of finances and their continuation as such for the future depend to a considerable extent on how well those which are now available are used.

The mental hygiene movement as represented by the Mental Hygiene Society of Virginia, to be effective must take the lead in the promotion and development of a new spirit. Its teachings and principles cut across nearly every section of the social strata. Its purpose is to promote freedom of mind and make possible a greater degree of happiness in everyday living. It should be an aid to education, religion and all forms of social welfare and linked closely with these groups for a State-wide, co-ordinated effort to make Virginia a good place to live in for all its citizens.

MILITARY MEDICINE

The following letter has been received from Dr. David B. Stuart of Roanoke. We would like to hear from more of our members in the Service. How about it? We know you all have had some interesting experiences which could be published.

MAY 1, 1944.

Perhaps I was in a bit of whimsical humor yesterday when I received a card inviting me to attend the meeting of the Society in October to be held in Richmond. The last line suggesting that it would be a good time to "plan" a "vacation" appealed to me particularly, as how we "over here" would love to plan such a vacation, if ours were the planning.

Seriously though it made me realize how out of touch I had allowed you to become, and I thought I had written you before to help you keep the records straight, but must have allowed it to escape my attention. My present address is as below:

Major David B. Stuart, M. C., O-298095,
44th Hospital Train,
APO 813, c/o PM, New York City.

I was made a Major before leaving Texas last year, and was put in command of a Hospital Train which I brought overseas first to — and then later to — where we have been stationed for sometime. Wish I could tell you all that I have done, am doing and "have been done to" for it would make an interesting story, but the Army is "sorta" particular as to just what we say.

Have run across quite a number of Doctors from Virginia and several from the good Town of Roanoke.

Hope to see you in October but am afraid it won't be in the year 1944.

DAVID B. STUART.

Virginia Doctors in Service Supplement 7

This is the Seventh Supplement to the list of Virginia Doctors in Service, the original list appearing in the July 1942 *Monthly*, with supplements in September and October 1942, January, April and September 1943, and February 1944. Names are given in alphabetical order with home addresses in view of constant changes in location and rank.

The *Monthly* will appreciate it if any reader will advise of omissions that they may be included in a future supplement.

MEMBERS OF MEDICAL SOCIETY OF VIRGINIA

Dr. Lyle E. Delap, Radford.
Dr. William Minor Deyerle, Richmond.
Dr. Douglass D. Fear, Roanoke.
Dr. James B. Funkhouser, Marion.
Dr. Edward E. Haddock, Richmond.

Dr. Richard F. Hawkins, Radford.
Dr. Horace D. Hoskins, Lynchburg.
Dr. Hal S. Johnson, Patterson.
Dr. C. E. Keefer, Lynchburg.
Dr. A. C. Ray, Jr., Ashland.
Dr. James P. Williams, Richlands.

NON-MEMBERS

Dr. Elton M. Alrich, University.
Dr. Walter P. Barnes, University.
Dr. David Joseph Barton, Roanoke.
Dr. Harry J. Bartron, Jr., Roanoke.
Dr. Charles Porter Blunt, III, Lynchburg.
Dr. Louis Alfred Cibelli, Roanoke.
Dr. Simon Coren, Petersburg.
Dr. Jean DesRochers, Roanoke.
Dr. George E. Eward, Richmond.
Dr. Joseph Edwin Faingold, Roanoke.
Dr. Michael Ronald Frisch, Newport News.
Dr. Julius J. Gibbons, Jr., Richmond.
Dr. James Burnett Gilbert, Richmond.
Dr. Fleming W. Gill, Richmond.
Dr. Ovidio J. Giovanelli, Radford.
Dr. R. Kennon Hancock, Charlottesville.
Dr. Haywood Northrop Hill, Richmond.
Dr. Charlton G. Holland, Jr., Danville.
Dr. Arthur Klein, Richmond.
Dr. Melvin B. Lambreth, Jr., Richmond.
Dr. Donald Wayne Linck, Charlottesville.
Dr. Thomas Francis McGough, Pulaski.
Dr. Edward Thomas McKee, Norfolk.
Dr. Louis J. Manhoff, Jr., Richmond.
Dr. William E. Moody, Charlottesville.
Dr. Eric Francis D. Owen, Hooes.
Dr. Francis Xavier, Paletta, University.
Dr. Charles R. Riley, Richmond.
Dr. Elmer S. Robertson, Richmond.
Dr. Samuel H. Ross, Roanoke.
Dr. Charles Lester Salmon, Jr., Richmond.
Dr. Thomas Scarlett, Harrisonburg.
Dr. Percy E. Schools, Jr., Richmond.
Dr. E. Ling Shiuh, Richmond.
Dr. Philip Laub Shultz, University.
Dr. James Avon Smith, Richmond.
Dr. H. U. Stephenson, Jr., Richmond.
Dr. Joshua P. Sutherland, Haysi.
Dr. Herman Isidor Switkes, Kecoughtan.
Dr. Michael Chester Tavenner, Norfolk.
Dr. Smith Davis Taylor, Roanoke.
Dr. John Kirk Train, Charlottesville.
Dr. James A. Thweatt, Petersburg.
Dr. Jack Lankford Ulmer, Richmond.
Dr. Louis F. Verdel, Roanoke.
Dr. Harold E. Wager, Charlottesville.
Dr. Paul Weitz, Roanoke.
Dr. Mark B. M. Williams, Richmond.
Dr. Robert M. Wilson, Richmond.

Dr. Reuben F. Wohlford, Roanoke.

Dr. Frederick G. Woodson, Charlottesville.

Promotions in the Service.

Promotions of Virginia doctors in the Services have been noted as follows:

TO COMMANDER:

Dr. James N. Williams, Richmond.

TO MAJOR:

Dr. Hugh B. Brown, Jr., Draper.

Dr. Thomas E. Painter, Pulaski.

Dr. David B. Stuart, Roanoke.

Dr. James W. Tankard, Hilton Village.

TO CAPTAIN:

Dr. John F. Gayle, Newport News.

PUBLIC HEALTH

I. C. RIGGIN, M.D.,

State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for April, 1944, as compared with the same month in 1943, and for the period of January through April, 1944, compared with the same period in 1943, follows:

	Apr.	Apr.	Jan.-	Jan.-
	1944	1943	1944	1943
Typhoid and Paratyphoid Fever	16	8	32	44
Diarrhea and Dysentery	205	99	1,014	420
Measles	4,528	2,087	13,156	6,147
Scarlet Fever	577	167	1,494	778
Diphtheria	26	15	88	138
Poliomyelitis	2	0	4	10
Meningitis	55	107	306	492
Undulant Fever	2	3	12	9
Rocky Mountain Spotted Fever	1	0	2	1
Tularemia	0	1	16	24

MORTALITY AMONG THE MIDDLE-AGED

Demands upon adults between 45 and 65 years of age have become increasingly great in the past two years due to the gearing of the nation to war production. The health of the population of this age group, constituting as it does a large proportion of persons in executive and managerial positions and of skilled workers, is of especial importance to war industry.

Between the ages of 45 and 65 years, mortality rates begin to increase rapidly. During the latest census year, 1940, the death rate in Virginia for the age group 45 to 55 years was 13.2 per cent per 1,000 population, and for the group 55 to 65 years was 25.8. The general time trend in mortality for this sector of the population is slightly downward, although year-to-year variations are somewhat wide. The sex differential is relatively large—the rate for

males of this group in 1940 exceeding the rate for females by 38 per cent.

Deaths among persons between the ages of 45 and 65 years in the State in 1943 totaled 7,910, among 28,707 of all ages. Seven major causes were responsible for 80 per cent of deaths among the middle-aged. Diseases of the heart accounted for the largest number, 2,450, or 31 per cent of the total. Next in numerical order came intracranial lesions of vascular origin (including cerebral hemorrhage, embolism, thrombosis, softening, and paralysis of other and unspecified types) which caused 1,047 deaths (13 per cent). Cancer ranked third, with 987 deaths (12 per cent). Nephritis, with 755 deaths (10 per cent) was fourth; then came pneumonia and influenza with 383 deaths (5 per cent). Tuberculosis (all forms), in the sixth place, numbered 359 (5 per cent). Deaths due to accidents of all types came seventh with 355 deaths (4 per cent). The seven principal causes of death twenty years ago were the same as those in 1943. The relative rank of the causes, however, showed one difference—cancer and nephritis in the third and fourth places, respectively, in 1943 were in reverse positions in 1924.

The cardiovascular-renal diseases constitute the chief health problem of the middle-aged. Despite a downward movement in the death rate for this group of causes during the past two years, it is possible that the stress and strain of maintaining production schedules during the war years may result in higher mortality among those in the 45 to 65 year age-bracket. Statistics in Virginia for the first quarter of the year 1944 indicate an increasing death rate for the diseases of the cardiovascular-renal system.

WOMAN'S AUXILIARY
to the
MEDICAL SOCIETY OF VIRGINIA

President—MRS. W. CLYDE WEST, Alexandria.
President-Elect—MRS. PAUL C. PEARSON, Turpin.
Recording Secretary—MRS. C. C. SMITH, Norfolk.
Corresponding Secretary—MRS. N. G. SCHUMAN, Alexandria.
Treasurer—MRS. REUBEN F. SIMMS, Richmond.
Chairman, Press and Publicity—MRS. E. LATANE FLANAGAN, Richmond.

The "Bulletin"

Of the Woman's Auxiliary to the American Medical Association should have been read and used by members of the Association to a greater extent this year than ever before because of the excellent articles on "The Wagner-Murray-Dingell Bill", carried in each issue. All Auxiliaries can urge their members to avail themselves of this material and aid themselves in discussing the bill freely and intelligently. The December 1943 issue gives a digest of the Wagner Bill and the March 1944 carries an article on "The Layman's Viewpoint".

A new service carried by the *Bulletin* is the names and addresses of auxiliary members stationed with their husbands in the armed forces. They are listed by states in which they are now residing and it is suggested that local auxiliaries extend the courtesy of their meetings to those members now residing in their state.

Our part in the community health programs and coming articles in *Hygeia* are other aids carried in the *Bulletin* to help members in their efforts to aid their husbands.

The next issue of the *Bulletin* will carry a detailed program of the twenty-second annual meeting of the Auxiliary to be held in Chicago, June 12-15, at the Hotel Knickerbocker.

Perhaps next year the Auxiliary Presidents will themselves realize the value of the *Bulletin* and try to interest more members in subscribing.

SARAH D. ENGH (MRS. O. ANDERSON)
Chairman, Bulletin.

Mid-Tidewater Auxiliary.

The regular quarterly meeting of this Auxiliary was held on April 25th in the home of Mrs. W. S. Cox of West Point, with Mrs. Hawes Campbell, president, presiding. Mrs. Paul Pearson, acting pro-

gram chairman, had arranged an impressive program in observance of Doctor's Day and presented a lovely tribute in memory of Dr. Hawes Campbell. Mrs. James W. Smith read a prayer entitled "The Doctor". Mrs. W. S. Cox read an interesting article from the VIRGINIA MEDICAL MONTHLY relative to the many accomplishments of our State Medical Society President, Dr. Bowyer.

Mrs. Campbell then presented Mrs. Fred Alexander, Educational Director and State Commander, Women's Field Army for Cancer Control, who gave much valuable information and many suggestions as to how the public can be educated to help eradicate this most horrible disease. She told of the progress being made in the various counties and also told of the fine work of one of King William's farmer doctors—namely Dr. Roscoe Spencer.

The Auxiliary was happy to have as guests Mrs. Hudnall Ware, Mrs. Payne and Mrs. Alexander, of Richmond, and Miss Parker of Providence Forge. After a delicious lunch as guests of the doctors at the York Inn, the ladies were taken on a tour to see the gardens at Chelsea and Romancoke plantations.

VIRGINIA M. PEARSON,
Publicity Chairman.

BOOK ANNOUNCEMENTS

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgement of receipt. However, we assume no obligation in return for the courtesy of those sending us same.

Small Community Hospitals. By HENRY J. SOUTH-MAYD, Director, Division of Rural Hospitals, The Commonwealth Fund. And GEDDES SMITH, Associate, The Commonwealth Fund. New York., The Commonwealth Fund. 1944. 182 pages. Cloth. Price \$2.00.

Synopsis of Diseases of the Heart and Arteries. By GEORGE R. HERRMANN, M.S., M.D., Ph.D., F.A.C.P., Professor of Medicine, University of Texas; Director of the Cardiovascular Service, John Sealy Hospital; Consultant in Vascular Diseases, U. S. Marine Hospital. Third Edition. St. Louis, The C. V. Mosby Company. 1944. 516 pages. With 103 Text Illustrations and 4 Color Plates. Cloth. Price \$5.00.

Synopsis of Neuropsychiatry. By LOWELL S. SELLING, Sc.M., M.D., Ph.D., Dr. P. H., Director, Psychopathic Clinic, Recorder's Court, Detroit, Mich.; Associate Attending Neuropsychiatrist, Eloise Hospital; Adjunct Attending Neuropsychiatrist, Harper Hospital. St. Louis, The C. V. Mosby Company. 1944. 500 pages. Cloth. Price \$5.00.

Industrial Ophthalmology. By HEDWIG S. KUHN, Hammond, Indiana. St. Louis, The C. V. Mosby Company. 1944. 294 pages. With 114 Text Illustrations Including 2 Color Plates. Cloth. Price \$6.50.

Practical Malaria Control. A Handbook for Field Workers. By CARL E. M. GUNTHER, M.D., B.S., D.T.M. (Sidney), Field Medical Officer, Bulolo Gold Dredging Ltd., Territory of New Guinea, at present with the Australian Medical Corps. Foreword by Prof. Harvey Sutton, O.B.E., M.D., F.R.A.C.P., B.Sc., D.P.H., F.R.San.I. Philosophical Library, New York. 1944. 91 pages. Cloth. Price \$2.50.

Fundamentals of Psychiatry. By EDWARD A. STRECKER, M.D., Sc.D., F.A.C.P., Professor of Psychiatry and Chairman of the Department, Undergraduate School of Medicine, University of Pennsylvania; Psychiatrist to the Pennsylvania Hospital; Attending Psychiatrist, Psychopathic Division, Philadelphia General Hospital; etc. Second Edition. Philadelphia, J. B. Lippincott Company. 1944. xviii-219 pages. 15 illustrations. Cloth. Price \$3.00.

Virus Diseases in Man, Animal and Plant. By GUSTAV SEIFFERT. A Survey and Reports Covering the Major Research Work Done During the Last Decade. Philosophical Library, New York. 1944. 332 Pages. Cloth. Price \$5.00.

The Nature and Treatment of Mental Disorders. By DOM THOMAS VERNER MOORE, O.S.B., Ph.D., M.D., Professor of Psychology and Psychiatry, Catholic University of America. Foreword by Edward A. Strecker, M.D., Professor of Psychiatry, Graduate and Undergraduate Schools of Medicine, University of Pennsylvania. Grune & Stratton. New York. 1943. 312 pages. Cloth. Price \$4.00.

This treatise on clinical psychiatry has been well presented. The author offers much practical material from his accumulated clinical experience.

The book offers many advantages to the reader. It describes many interesting case reports. It deviates from the theoretical, boring conglomeration of phrases that force the reader to desire to skip through its pages. The author maintains interest from beginning to end. This is as it should be. Psychiatry is so presented that one readily discovers the author's objective; it is an art or a science with its ability to understand and meet the needs of those who are mentally sick.

Dr. Moore's treatise clearly presents the sound principles of the various major and minor psychoses. He deals with each type as an entity that needs sound treatment like any physical disease that we may encounter. The author leads us away from

mere custodial care and soundly offers the case reports as to the various concepts of mental disorders; the fundamental principles of psychopathology. He studies the individual and the family in their mental distress. The problem is analyzed socially, psychologically, and from a psychiatric basis. Again, this is as it should be.

This treatise will be helpful to psychiatrists, psychologists, physicians, medical students and to psychiatric nurses and social workers. I congratulate Dr. Moore on his book that is timely with the increasing needs of more sound understanding of the mentally sick. Namely, study the patients systematically, treat to the best of our knowledge and cast aside the old traditional custodial care.

VINCENT E. LASCARA, M.D.

Tuberculosis of the Ear, Nose and Throat: Including the Larynx, the Trachea, and the Bronchi. MERVIN C. MYERSON, M.D., New York City. Springfield, Ill. and Baltimore, Md., Charles C. Thomas. 1944. 291 pages. 89 illustrations. Price \$5.50.

In an excellent monograph Myerson has described tuberculous lesions of the ear, nose, throat, trachea, bronchi and esophagus that have been encountered in a study of more than ten thousand patients suffering from tuberculosis.

The book is satisfying in all respects.

The arrangement of material, method of presentation and profuse illustrations all serve to provide adequate descriptions of almost all tuberculous lesions observed by the oto-laryngologist and bronchoesophagologist.

The author's broad experience has provided him with an understanding of tuberculosis that is shared rarely by other specialists in his field. He recognizes tuberculosis as primarily a constitutional disease and the conservative attitude that he has assumed in treating local manifestations of this infection will be lauded by phthisiologists.

Myerson's experience in the study of tuberculous tracheo-bronchitis is unique and it is refreshing to have his opinion that bronchoscopy should not be routinely employed in all patients having pulmonary tuberculosis but should be reserved for those in whom an obstructing lesion is suspected or for whom collapse therapy is contemplated.

As usual the publisher has done a superb job in the preparation of this most attractive volume.

VIRGINIA MEDICAL MONTHLY

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M. PIERCE RUCKER, M. D.,
Editor

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VOL. 71

JUNE, 1944

No. 6

The Synthesis of Quinine

THE synthesis of quinine by Woodward and Doering adds a new chapter to the long history of this noble drug. Doctors have always thought highly of quinine. It is one of the few drugs with which a doctor could really do things. It was our first specific remedy, and a list of specifics is even now all too short.

One can learn much from the history of quinine, not only in medicine but also in big business and politics. When it was first used is unknown. The natives of Peru knew of the virtues of the "bark" before the white man came to America in search for gold. It is a highlight in folklore therapeutics equalling that of cowpox and digitalis and ephedrine. Jenner proved the tradition of the dairy maids of Gloucestershire about the protective power of cowpox, and Withering that of the wise women about Manchester in regard to digitalis and dropsy, but the sponsor for the quinine myth is unknown. The tree was named for the Countess of Chinchon who was said to have been cured by the "bark", but even that is disputed. It was first mentioned in European medical literature in 1643 by Herman van der Heyden, a Belgian. For the next two hundred years it was the only effective remedy for the world's most widely spread disease. Many other uses were found for it in medicine, and even in the arts. It was extensively used in producing a light polarizing material.

The supply of the South American bark began to be inadequate in 1850. The British and Dutch governments attempted to grow cinchona trees in India and Java, but the plantations were failures because the trees they grew had a very low quinine content. In 1865 Ledger, exploring in the Andes, selected a type of cinchona tree that he considered to have the highest quinine content. He sold the Dutch government one pound of seed from this type. The trees in Java from this batch of seed in 1941 produced over one thousand tons of quinine. The venture was so successful that all other production became unprofitable. As so often happens when all the eggs are in

one basket, the basket was upset and now the civilized world has no source of supply of this valuable drug.

The highlights in the chemical history of quinine are as follows: In 1820 quinine was isolated from the cinchona bark for the first time. This was done by two French chemists, Pelletier and Caventou. In 1853 Pasteur made quinotoxine from quinine. This had no practical value at the time, but merely illustrated the famous quotation from Benjamin Franklin that Pasteur himself once used, i. e., that a scientific fact was like a newborn baby, you never can tell what it will grow up to be. In 1855 a German chemist, Strecker, determined the number of atoms of carbon, hydrogen, nitrogen, and oxygen that were present in the quinine molecule. The next year William Henry Perkin, later Sir William, attempted to synthesize quinine. He failed to make quinine but produced instead the dye, mauve. He recognized the importance of his discovery and built a factory—the first coal tar factory—for the production of the dye, thus starting the organic chemistry industry.

In 1871 quinotoxine, previously produced from quinine by Pasteur, was isolated from cinchona bark by Howard. In 1908 Rabe working on formulae developed by Koenigs determined the molecular structure of quinine. Ten years later he was able to resynthesize quinine from quinotoxine, the same product Pasteur had produced from quinine in 1853. In 1931 Rabe synthesized dihydroquinine which but for two extra atoms of hydrogen has the molecular structure of quinine. Finally in 1944 Woodward and Doering working in the Polaroid laboratories succeeded in synthesizing quinotoxine. Their problem was then solved, for then they merely had to repeat Rabe's work in order to have made the total synthesis of quinine. This scientific achievement is still like a newborn babe; whether it becomes useful depends upon a number of factors. One of the last steps in the synthesis results in two isomers, one of which is quinine and the other is quinine's mirror image. The latter is an entirely new substance that does not exist in nature. No one knows what the properties are. If it is found to have the same therapeutic properties that quinine has, it would not be necessary to separate the isomers, and the combined anti-malarial substances would be easier to produce, and could probably be manufactured on a commercial basis.

Finally, this first rate achievement brings to mind the discussion that has been going on for some years about the conditions best suited to stimulate investigation. There are some who argue that those with a gift of scientific curiosity should not be burdened with executive and teaching duties. Others maintain that contact with scholars and other investigators is invaluable. We doubt if there is any one answer. Some work best in isolation and others need the inspiration that comes from the association with other workers. If an investigator has a problem, the ways and means of solving it are usually found, whether it be in an university, a foundation, or a big corporation. The scientific fact that is discovered may have no practical value, but the investigator and those who have made the investigation possible have done the world a distinct service.

Menstrual Toxin

THE taboos in regard to menstruating women are legion. They have existed in all times. All primitive people have them in one form or another. Among the American Indians, squaws at the time of menstrual purgation were obliged to seclude themselves and in many instances to occupy isolated lodges. In all tribes they were forbidden to prepare food for anyone save themselves. Were a menstruating woman to step astride a rifle, a bow or a lance, the weapon would become useless. In Australia native women during this season are forbidden to touch anything that men use. Aristotle

said that the very look of a menstruating woman would take the polish out of a mirror, and the next person looking it in would be bewitched. Many of the taboos involve growing things, such as not allowing a menstruating woman to walk across a field of sprouting grain. The failure of bread to rise when kneaded by a menstruating woman is a common belief among Southern darkies. In England it was believed that curing of meats was not successful if handled by a woman who was unwell. An old Russian custom discouraged the pickling of cucumbers or the making of sauerkraut by such individuals, and the latter part of this belief is widespread in this country. In France women who are unwell are not admitted in sugar refineries where the syrup is boiling or the sugar is being bleached on account of the belief that their touch would discolor the product. Winemakers look with disfavor on the presence of such persons. In the Far East menstruating women are not allowed to pick poppyheads and prepare opium. Pliny's writings concerning the poison of menstruation and its effect on seeds, garden plants, etc., are well known. He says, "On the approach of a woman in this state, must will become sour, seeds which are touched by her become sterile, grass withers away, garden plants are parched up, and the fruit will fall from the tree beneath which she sits." On the other hand, in Cappadocia menstruating women were walked about the fields to preserve the vegetation from worms and caterpillars. We have always thought of such taboos as mere superstitions, but the recent work of Macht and others gives a scientific basis for such beliefs. Once again folk-medicine has been proved to contain a germ of truth as did the superstition that an attack of cowpox afforded protection against smallpox, or that foxglove cured dropsy. For fifty centuries the Chinese have used Ma Huang as a diaphoretic, antipyretic, circulatory stimulant, and respiratory sedative. The western world now uses it extensively under the name ephedrine.

In 1920 Bela Schick's experiments with cut flowers suggested that there was even more contamination from the touch of a menstruating woman than superstition indicated. Macht and Livingston by phytopharmacologic methods found that there is in the blood serum, blood plasma, saliva, sweat, tears, milk, and other secretions of a menstruating woman a toxic substance which markedly inhibits root growth of *Lupinus albus* seedlings. Other work followed which Macht in a recent paper (Am. J. M. Sc. 206:281, 1943) fully reviews. Rahn and his coworkers have shown that menotoxin has an inhibitory action upon yeast. Animal tissue is also sensitive to the menstrual toxin. Borsarelli found that menstrual serum was exceedingly poisonous for larvae of *Bufo vulgaris*. Macht and Lubin showed that menstrual serum is more toxic than normal blood for goldfish and paramecia. Macht and Davis showed that small doses of menotoxin profoundly depressed the neuromuscular system of rats as shown by the maze test and the rope walking and rope climbing tests. Macht described a vasoconstricting effect of local application of menstrual serum to genitalia of male cats and rabbits. Almost unbelievable are the results reported by Christiansen, Rahn, Barnes, and Ferguson who showed that yeast cells can be inhibited by emanations or radiations from the bodies of menstruating women. Various parts of the body such as the fingertips and even the eyes give off these radiations which will pass through quartz but not through glass.

The chemical nature of menotoxin is not yet completely determined. The various pharmacologic and biochemical tests, particularly the phytopharmacologic test indicate a close relationship of menotoxin and cholesterol or more strictly speaking, oxysterin. Furthermore, Rahn has shown that cholesterol has inhibitory effects on yeast similar to those he had observed in his radiologic tests on menstruating women.

Societies

Roanoke Academy of Medicine.

At the last meeting of the Academy, the following officers were elected for the ensuing year and will take office at the October meeting: Dr. Linwood D. Keyser, president; Dr. B. P. Seward and Dr. T. J. Hughes, vice-presidents; and Dr. David S. Garner, secretary-treasurer (re-elected).

The Executive Committee will include Drs. Andrew M. Groseclose, Frank A. Farmer, Fred E. Hamlin, W. L. Powell and Charles W. Dorsey.

The following were named as the Judiciary Committee: Drs. J. W. Preston, John O. Boyd, W. R. Whitman, H. B. Stone and W. W. S. Butler.

Delegates and alternates were also appointed at this time to the annual meeting of the Medical Society of Virginia in Richmond.

The Accomac County Medical Society,

At a recent meeting, elected the following as officers for the current year: President, Dr. O. R. Fletcher of Sanford; vice-president, Dr. Rooker J. White of Keller; and secretary-treasurer, Dr. James C. Dougherty (re-elected) of Onancock.

The Amelia County Medical Society

Held its annual meeting on May the 11th, at which time Dr. J. M. Habel of Jetersville was elected president for the coming year, and Dr. J. L.

Hamner of Mannboro was re-elected secretary-treasurer. Delegate and alternate were also named for the meeting of the State Society in October.

Norfolk County Medical Society.

On May 8th, the Society was guest of the Staff of the Naval Hospital, Portsmouth, when members of the Staff presented a Symposium on Penicillin. The following program was arranged: Uses in Surgical Infections by Dr. J. D. Wilson; Uses in Joint Infections by Dr. R. Schubert; Uses in Ear, Nose and Throat by Dr. A. T. Smith; and Uses in Medical Diseases by Dr. H. J. Fox.

On May 15th, Dr. Porter P. Vinson, professor of laryngology of the Medical College of Virginia, spoke on Diaphragmatic Hernia.

Dr. N. F. Rodman is president of this Society and Dr. Lockburn B. Scott, secretary-treasurer.

The Dickenson-Buchanan County Medical Society

Met at the Grundy Hospital on April the 19th, and after supper elected delegates and alternates to the meeting of the Medical Society of Virginia in October. Following this, a motion picture on Treatment of Diphtheria was presented. The monthly meetings of this Society are well attended. Dr. J. C. Trivett of Page is president and Dr. T. C. Sutherland of Haysi secretary-treasurer.

News

War Bond Facts and Figures.

The Fifth War Loan will begin June 12th, closing July 8th.

The goal will be \$16,000,000,000, of which 6 billions will be sought from individual investors.

More than 55,000,000 Americans own at least one War Bond. That's an average of better than 1½ Bond owners for every U. S. family.

Total sales in the four War Loan drives, plus the sales of savings bonds, aggregate more than 87 bil-

lion dollars. Three weeks after Pearl Harbor it was only 2½ billions.

Individual investors purchased 32½ billions of the total—13 times more than their holdings in December 1941.

Single "E" Bonds sold—separate pieces of paper—total more than 500,000,000. That's a 38-time increase since Pearl Harbor. A half-billion "E" Bonds laid side by side would girdle the globe 2½ times. Placed one on top of the other, they would

make a pile 39½ miles high.

Sales of \$25 Bonds alone have jumped to 346 million pieces. That's 69 times the number of dollar bills now in circulation.

27,000,000 Americans are now putting almost ten cents of every dollar they make into War Bonds every pay day. They're plowing back into the war effort 475 million dollars a month.

During the War Loan drives more than 5,000,000 unpaid volunteers ring doorbells and pound pavements to get their sales.

You can buy War Bonds or War Stamps in any one of one million places during the Fifth War Loan drive.

More "E" Bonds—the smaller ones for the small investors—were sold in the Fourth War Loan than ever before—69,900,000 individual transactions that brought in \$3,187,000,000.

To reach this total sales of "E" Bonds averaged \$63,740,000 every working day, \$7,967,550 per working hour.

Putting it another way, sales of "E" Bonds during the Fourth War Loan averaged \$24.56 for every man, woman and child in the nation. This was \$5.35 more than the average for the Third War Loan.

Bonds are the best advertised product in history but it hasn't cost the government a cent. Private business and publications contributed the space, the time and the manpower—more than 240 million dollars worth.

Because so many people contribute their time, office space and other assistance, War Bond sales' cost to the government is only one cent for every thirty-three dollars raised.

Of every \$100 Americans saved in 1943, they loaned forty-four to the government to help pay for the war.

For the Richmond Meeting

Of the Medical Society of Virginia, the following rates have been secured from local hotels:

JOHN MARSHALL HOTEL—HEADQUARTERS

(All rooms with bath.)

Single—\$4.00, \$4.50 and \$5.50.

Double—\$6.00, \$7.00 and \$9.00.

Twin beds—\$7 00, \$8.00, \$9.00 and \$12.00.

RICHMOND HOTEL

Single with bath—\$3.00, \$3.50, \$4.00 and \$4.50.

Single without bath—\$2.25 and \$2.50.

Double with bath—\$5.00, \$5.50, \$6.00 and \$6.50.

Double without bath—\$4.00.

Twin beds with bath—\$6.00 and \$8.00.

Twin beds without bath—\$4 50.

MURPHY HOTEL

Single with bath—\$3.00 and \$3.50.

Single without bath—\$2.25 and \$2.50.

Double with bath—\$5.00, \$5.50 and \$6.50.

Double without bath—\$3.50 and \$4.00.

WILLIAM BYRD HOTEL

Single with bath—\$3.00, \$3.50 and \$4.00.

Single without bath—\$2.50.

Double with bath—\$5.50, \$6.00 and \$6.50.

Double without bath—\$4.50.

Twin beds with bath—\$6.00, \$6.50, \$7.00 and \$7.50.

Twin beds without bath—\$5 00.

JEFFERSON HOTEL

(All rooms with bath.)

Single—\$3.50, \$4.00, \$4.50 and \$5.00.

Double—\$5.50 and \$6.00.

Twin beds—\$6.00, \$7.00 and \$8.00.

HOTEL RUEGER

Single with bath—\$3 00-\$4.00.

Single without bath—\$2.50.

Double with bath—\$4.00-\$6.00.

Double without bath—\$3.50.

Twin beds with bath—\$6.00.

Owing to the large number of Service men constantly coming and going, the hotels have suggested that reservations be made in advance, stating specifically date of arrival. It is easier to cancel reservations than to make them at the hotel of choice at the last minute, so please give this your prompt attention.

The meeting promises to be an interesting one and a good attendance is expected.

McGuire General Hospital.

In the outskirts of the City of Richmond, in the county of Chesterfield, rises a new city in red brick, the McGuire General Hospital. Bearing a name which is legend in the South, McGuire, after Dr. Hunter Holmes McGuire, Medical Director of the 2nd Army Corps of the Confederacy in the War Between the States and personal physician to Gen. Stonewall Jackson, the new hospital is one of the finest of its kind in the world.

Covering 142 acres, with 70 one-to-three story buildings interconnected by continuous, enclosed corridors, its completeness is evidence of the Army Medical Department's determination to provide the maximum in care, treatment and comfort for the

inevitable military casualties of World War II.

To date, the McGuire General Hospital has not been assigned any medical specialty by the War Department. Patients coming to its doors aboard hospital trains, by ambulance, or by ships from overseas stations may have physical incapacities of any nature. The medical, surgical and dental skills and facilities are being organized to meet any medical eventualities, and the finest equipment yet devised stands ready to facilitate the work of a staff of specialists drawn from all over the United States for service at McGuire.

Many of these physicians and surgeons have had actual battlefront experience in this war and so are especially well qualified to treat the types of casualties produced by modern warfare. Aiding them and supplementing their work will be a group of experienced Army nurses, Army medical corpsmen and a body of civilian employees itself numbering close to a thousand.

At the head of this immense organization stands a surgeon, who is today in his twenty-seventh year of Army medical experience, Col. P. E. Duggins, formerly executive officer of Walter Reed General Hospital in Washington, D. C. Those who know him have no doubt that patients coming to the McGuire General Hospital will lack for naught to make their stay pleasant and their recovery speedy.

With the first patients expected in early June, the new hospital is now actually a city within itself, including, in addition to its complete medical-surgical facilities such items of interest as a gymnasium, athletic field, motion-picture theatre, auditorium, post-exchange, ice cream parlor, barber shop, beauty parlor, and a telephone exchange for calling the folks-at-home which may employ as many as twenty-five operators at one time.

Medical and surgical treatment will be supplemented by a comprehensive program of reconditioning designed to shorten convalescence and, through a planned series of recreational and educational courses, to relieve boredom and condition the minds and bodies of the patients for a return to an active life. Within this program will be contained a multitude of media and devices to restore mental and physical vigor, including occupational therapy, vocational education, orientation lectures, recreational facilities, competitive sports, etc. A patient's day at McGuire General will be a full one and will serve to offset psycho-neurotic tendencies resulting

from battle experience and make the patient "come alive" again in heart as well as in body, a better man and a better citizen.

So a tradition that was born in the preceding century is extended and amplified by a new monument, and this edifice, the McGuire General Hospital, will not fall short of the many other projects and units that have in this country as well as on foreign battle-grounds, so proudly advanced the spirit and the humane purpose that is synonymous with the name of McGuire.

Dr. Horsley to be Honored.

Dr. J. Shelton Horsley, surgeon-in-charge at St. Elizabeth's Hospital, is to be awarded the honorary degree of Doctor of Science at the next commencement exercises of the Medical College of Virginia, Richmond, on September 23, according to announcement by Dr. W. T. Sanger, president of the college. Known internationally for his research in suturing arteries and reversal of arterial circulation and in surgery of the stomach and intestines, Dr. Horsley has also been one of the leaders of the South in the encouragement of research on the part of others. For his work on arterial circulation reversal he was awarded a gold medal by the Southern Medical Association and for other research a medal and several certificates of honor by the American Medical Association. He is at present the surgeon member of the National Advisory Cancer Council of six.

When Dr. Horsley was president of the Virginia Academy of Science in 1926, an endowment fund of \$12,000 was raised under his leadership. Interest from this fund has been used since for grants-in-aid for scientific investigative work to promising young Virginia scientists and for one of the prizes given annually at the Academy meeting to the author of a meritorious paper reporting results of research. A prize of approximately \$1,000, interest from a fund established by Dr. Horsley as a memorial to his father, is awarded every two years by a committee in the department of medicine at the University of Virginia for an outstanding thesis on research in a problem of general surgery by a University graduate in medicine or by a St. Elizabeth's former interne. He was also instrumental in the establishment of prizes for papers by staff members of the Virginia State Hospitals.

Dr. Horsley has been president of the Virginia

Academy of Science, the Southern Medical Association, the Medical Society of Virginia, the Richmond Academy of Medicine, the Association for the Study of Neoplastic Diseases, and the Virginia Cancer Foundation. He has many publications to his credit, the most recent one being on the removal of both ovaries when a breast is operated upon for cancer, in the April issue of the journal, *Surgery*. He has lately written a eugenical essay, "Breeding Better People for Peace". He is the author of several books on surgery. Commenting upon this announcement, Dr. Sanger said, "It is gratifying that our Board of Visitors has selected Dr. Horsley for our honorary degree this year. On every count he deserves it."

News from University of Virginia, Department of Medicine.

Dr. William F. Boos of Boston, former lecturer in Toxicology at Harvard Medical School, spoke on the subject "Experiences with Capital Poison Cases", on April 24 at the meeting of the University of Virginia Medical Society in Charlottesville.

Commencement exercises of the University of Virginia Hospital School of Nursing were held in the afternoon of April 25. Sixty-five nurses in the University of Virginia School, four affiliates from the Blue Ridge Sanatorium, and eleven affiliates from the Catawba Sanatorium were awarded certificates of graduation. The graduation address was given by Miss Agnes Ohlson, R.N. of the United States Public Health Service.

On May 4, Dr. Arnaldo Gabladon, Chief of the Division of Malariology of Venezuela and Chairman of the Pan-American Committee on Malaria, spoke before the University of Virginia Medical Society on "Vectors of Malaria in America". He spoke the following day on the subject "Antimalarial Organization in Venezuela".

Dr. Henry B. Mulholland, Professor of the Practice of Medicine in the University of Virginia Medical School, spoke at Camp Lee on May 12 to the Medical Officers on "Chemotherapy and Respiratory Diseases". On May 13 he spoke to the Business and Professional Women's Association of the State of Virginia, meeting in Roanoke, on the subject of "Medical Care".

The John Horsley Memorial Prize in Medicine in the amount of \$600, founded in 1925 by Dr. J. Shelton Horsley of Richmond, Virginia, as a me-

morial to his father, Mr. John Horsley of Nelson County, Virginia, was awarded at the time of the annual initiation ceremonies of the University of Virginia Chapter of Sigma Xi, on Thursday, May 11, to Dr. William Bennett Bean of the Department of Internal Medicine of the University of Cincinnati. The prize is open to all graduates of the Department of Medicine of the University of Virginia of not more than fifteen years' standing, and to former internes of St. Elizabeth's Hospital in Richmond, Virginia, under the same conditions. Dr. Bean was graduated from the Medical School of the University of Virginia in 1935. He is now on leave of absence, with the Commission of Major in the Medical Corps of the United States Army, Armored Medical Research Laboratory, Fort Knox, Kentucky. The prize was awarded for a paper on "Secondary Pellagra" by Drs. William Bennett Bean, Tom Douglas Spies, and Marion A. Blankenhorn, published in the February issue of *Medicine*.

Dr. Brown Resigns As Head of Blue Ridge Sanatorium.

On account of his health, Dr. William E. Brown has resigned as superintendent and medical director of Blue Ridge Sanatorium, effective July 1, after having held this position for twenty-three years. After a short time in private practice, he was appointed assistant physician to Catawba Sanatorium and continued his connection with that institution until his appointment to the Blue Ridge post. He was also connected with the teaching staff of the medical school of the University of Virginia. During his administration, the bed capacity at Blue Ridge Sanatorium has increased from 120 to 370 beds and the physical equipment of the institution has doubled.

Southern Medical Association.

Dr. W. T. Wootton of Hot Springs National Park, Arkansas, president of the Southern Medical Association died in a St. Louis hospital on May the 2nd, after a short illness. In accordance with the By-Laws of the Association, he has been succeeded by Dr. James A. Ryan, of Covington, Ky., who was elected vice-president at the Cincinnati meeting last year.

Dr. Walter J. Otis,

New Orleans, an alumnus of the Medical College of Virginia, has been re-elected president for the

coming year of the staff of the De Paul Sanitarium of that city, and has also been re-elected chairman of the Library Committee of the Hotel Dieu (Sisters' Hospital). He has also been asked to serve for the current year on the Judiciary Committee of the Orleans Parish Medical Society.

Dr. Joseph L. Kinzie,

After serving as Captain in the Medical Corps, A.U.S., from August 1942 to May 1943, was retired because of arthritis and returned to his home at Salem, where he practiced until March of this year. Finding it necessary to have a change of climate, he then located at Lake Wales, Florida, where he is continuing the practice of medicine.

Capt. John E. Porter, (MC) U. S. N.,

Native of Richmond and a member of the class of '15, Medical College of Virginia, has been sent to New Orleans as head of the United States Naval Hospital there. He has just completed two years of service in the South Pacific. In May 1943 he was given the legion of merit for meritorious conduct in battle for his administrative and executive ability in erecting, organizing, and operating a hospital under the most primitive of conditions for the care of sick evacuees.

The Virginia Society of Ophthalmology and Oto-Laryngology

Held its twenty-fifth annual meeting on April 29th in Lynchburg with the President, Dr. E. T. Gatewood of Richmond, presiding. Dr. John H. Dunnington of New York was guest speaker and the subject of his paper was "Complications of Cataract Extraction". The following members appeared on the program: Drs. H. S. Hedges, Thomas E. Hughes, William F. Hatcher, A. A. Burke, G. M. Maxwell, and Fletcher Woodward.

Newly elected officers are Drs. James R. Gorman, Lynchburg, President; Meade Edmunds, Petersburg, President-Elect; and Thos. E. Hughes, Richmond, Secretary-Treasurer. Richmond was selected for the next annual meeting.

MEADE EDMUNDS,
Secretary-Treasurer.

Married.

Captain William Lownder Peple, Jr., MC., AUS., Richmond, and Miss Margaret Elise Ascherfeld, Baltimore, Md., May 6th. Captain Peple is a grad-

uate of the Medical College of Virginia, class of 1941.

Editors on Quarterly Review of Obstetrics and Gynecology.

Dr. Nicholas J. Eastman of Baltimore has been elected editor-in-chief of the Section on Obstetrics of the *Review*, and Dr. Emil H. Novak, also of Baltimore, has been elected editor-in-chief of the Section on Gynecology.

Dr. Hilmar Schmidt,

Formerly of Petersburg where he was associated with Dr. Wright Clarkson, is now connected with the Roentgenological Department of Copley Hospital at Aurora, Illinois.

Old Commissions Wanted.

The National Naval Medical Center of Bethesda, Maryland, is endeavoring to collect for its archives a complete set of commissions issued to Naval medical officers and signed by past Presidents of the United States.

There is a small nidus now at the Center and it is hoped to be able to build this up to completion. Through the Navy Department Library and the National Archives a few more have been located. If libraries or individuals have in their possession such old commissions and would be willing to turn them over to the Center, there could be no more fitting enshrinement to them than their use for this purpose.

Any one who will comply with this request should send the commissions to the Division of Publications at the above address.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage.

Abramson, David I.—Vascular response in the extremities of man in health and disease.

Aptekar, Herbert H.—Basic concepts in social case work.

Ballenger, H. C.—A manual of otology, rhinology and laryngology.

Brown, Josephine—Public relief. 1929-1939.

Canavan & Eisenhardt—Brains of 50 insane criminals: Shapes and patterns.

Coleman, L. V.—Company museums.

Crile, George W.—An experimental and clinical research into certain problems relating to surgical operations.

Crile, George W.—Notes on military surgery. 1917.

Crile, George—The surgical treatment of hypertension. 1938.

Glasser, Q.—Physical foundations of radiology.

Gray, Henry—Anatomy of the human body. 24 ed. rev. 1942.

Gregory, T. C.—Condensed Chemical Dictionary. 3rd ed.

Grinker and Spiegel—War neuroses in North Africa . . . The Tunisian campaign.

Hayes, E. W.—Tuberculosis as it comes and goes.

Index Catalogue of the Library of Surgeon General's Office. v.VIII I-J.

Leifson, Einar—Bacteriology for students of medicine and public health.

Lewin, L.—The untoward effects of drugs, a pharmacological and clinical manual. 1883.

McCaughan, J. M.—Experimental surgery: a laboratory guide for undergraduate students.

Mackintosh, J. M.—The war and mental health.

Marburg, Otto—Hydrocephalus, its symptomatology, pathology pathogenesis and treatment. 1940.

May—Manual of diseases of the eye. 1943.

Moulton, F. R. ed.—Surface chemistry.

Munoz, F. J.—The microscope and its use.

Rosenau—Preventive medicine and public health. 6th ed.

Rowland, Amy—Cleveland clinic foundation. 1938.

Schieffelin & Co.—150 years service to American health. 1944.

Seiffert—Virus diseases in man, animal and plant.

Sigerist, H. E.—Civilization and disease.

Smith, F. G.—Sulfonamide therapy in medical practice. 1944.

For Sale—

Office equipment in good condition, including Short Wave Diathermy. Address "Equipment", care this journal, 1200 East Clay Street, Richmond 19, Va. (*Adv.*)

Obituaries

Dr. Robert Hunter Garthright,

For many years beloved physician of Vinton, died in a Roanoke Hospital on May 2nd, after a short illness, though his health had been failing for several months. He was a native of Henrico County, this State, and had just passed his eighty-fifth birthday. Upon completion of his academic education, he entered the Medical College of Virginia from which he received his diploma in medicine in 1885. He had been a member of the Medical Society of Virginia for nearly fifty-five years and had frequently contributed to the Virginia Medical Monthly. He was also a member of the Roanoke Academy of

Medicine by which he had been honored. His wife and a daughter survive him.

Dr. William Ward Seward,

Well-known physician of Tidewater Virginia, died at his home in Surry on May 5th, following a long illness. He was seventy years of age and graduated from the Medical College of Virginia in 1897. Dr. Seward had practiced in Surry County for nearly a half a century. He was chairman of the Medical Advisory Board for Surry and Sussex Counties during World War I, and was a past president of the Post-Graduate Medical Society of Southside Virginia. Dr. Seward had been an active member of the Medical Society of Virginia for forty-six years. His wife, a son and a foster-daughter survive him.

Dr. George Simeon Fultz,

Butterworth, died May 16th following a heart attack. He was seventy years of age and a graduate of the Medical College of Virginia in 1906. Dr. Fultz was at one time located in Rockingham County but had practiced in Dinwiddie County for thirty-two years. He was a Mason and had been a member of the Medical Society of Virginia for thirty-eight years. His wife, three sons and two daughters survive him. One son is Captain George S. Fultz, Jr., of the Army Medical Corps.

Dr. Robert Garnett Bledsoe,

Locust Grove, died February 2nd, at the age of seventy-five. He was a graduate of the former University College of Medicine, Richmond, in the class of 1896. Dr. Bledsoe had been a member of the Medical Society of Virginia for forty-eight years.

Dr. Jabez Peter Hankins,

Orange, died May 7th, at the age of sixty-four. He was a native of Pittsylvania County and a graduate of the Medical College of Virginia in 1908. Dr. Hankins took an active part in civic affairs of his community and was a Mason. He had been a member of the Medical Society of Virginia for a number of years and was president of the Orange County Society. His wife and one son survive him.

Dr. Walter Herbert Cobbs,

Rocky Mount, died February 5th of cerebral hemorrhage. He was sixty-two years of age and a graduate of the Medical College of Virginia in 1908. Dr. Cobbs was formerly a member of the Medical Society of Virginia.



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Virginia

MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

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Guest Editorial

The Naval Mobile Hospital in the South Pacific

THE unbelievable low mortality rate (less than 1%), reported by practically all Naval Hospitals established in the South Pacific area during the recent island offensive, is due to many interesting factors.

The personnel of these expeditionary bases usually consists of Commanding and Administrative officers from the regular Navy. The clinical officers are reserve doctors from various sections of our country, all specialists in their respective fields. Some of these men had had valuable experience in the field of traumatic surgery in civilian life, while others had worked at their specialties at various universities and clinics and private practices. The surgical department of each hospital is directed by a Chief of Surgery who has as assistants several general surgeons and other specialists in the fields of neuro-surgery, urology, ophthalmology, proctology, roentgenology, and orthopedics. The medical department is directed by a similar system, the clinical and malarial control laboratories also being under the Chief of Medicine. The department of Neuro-psychiatry became such an important factor that it necessarily functioned as a separate service.

At first, all nursing care was performed by hospital corpsmen, but later, Navy Nurses arrived and contributed much towards the comfort of our sick and wounded.

The Surgeon General and the Bureau of Medicine and Surgery had, with great foresight, amassed sufficient material, so that when the first hospital unit embarked from the west coast soon after Pearl Harbor, its equipment and physical set-up left little to be desired. The main buildings were constructed of prefabricated steel and wooden huts, which could be erected in 80 man hours per unit. As required, these units were used as single buildings or were placed end to end and used as long wards. There were Diesel motors to furnish power for electricity, and modern laundries, excellent galleys, steel hospital beds with comfortable mattresses, abundant sheets and all types of linens, along with other supplies. There were well lighted and well ventilated operating rooms with the newest surgical equipment, and ample supplies of medical and surgical materials to meet all demands. The x-ray equipment surpassed that of the average civilian hospital.

These Naval Medical Units, known as the Naval Mobile Hospital, are scattered on small islands throughout the South Pacific within a few flying hours from the combat zone. As the fighting zones advanced, the hospitals moved up so that the wounded were never more than a few hours from adequate and actually luxurious care. These 600 bed units are well concealed and are placed on a plateau exposed to the prevailing wind and well out of the malarial areas. A good, smooth road will always lead from

a nearby flying field to the hospital, as practically all serious casualties are evacuated by air. Because of this air service from the fighting front, the wounded can be transported within a few easy flying hours to a modern and comfortable Naval Hospital well away from combat dangers.

The primary care administered the wounded in the combat area influences to a great extent any subsequent treatment. All perforating abdominal wounds are operated immediately whether evidence of peritonitis exists or not, and some type of the Mikulicz procedure is usually performed. After an indwelling duodenal tube is provided, the patient is quickly evacuated by plane to the base hospital. These operations are done in field stations under the most hazardous conditions, but, nevertheless, immediate surgical intervention is always indicated. Exteriorization of the gut is always the procedure of choice, particularly where extensive visceral destruction is noted.

Shrapnel and bullet wounds are treated primarily for hemorrhage and shock. The wounds are dusted with sulfonilamide powder, a battle dressing applied and, if a member is involved, the part is fixed with plaster or other suitable materials. No attempt at debridement is made except under more favorable conditions in a hospital. The life giving role that plasma has played in the treatment of shock cannot be over emphasized or too highly praised. In a well lighted operating room and under the most favorable conditions, a thorough debridement is performed, meticulous care being taken to excise all devitalized tissue and at the same time to preserve all blood vessels and nerves. Foreign bodies are removed after x-ray and fluoroscopic studies are made for location. Arterio-venous aneurysms, which are common following extensive injuries are more favorably operated two or three months following the primary injury.

The treatment of burns depends on the available materials on hand. The best universally accepted immediate treatment is with bland vaseline. Shock is combated by the use of large amounts of intravenous plasma. Pain is controlled by morphine administered in the wonderfully efficient syrette. Skin grafting is started as soon as practicable, and most of the burn cases are ultimately returned to duty. As the result of careful immunization of each man prior to combat and the immediate administration of the "booster shots" of the toxoid following injury, tetanus is no longer a problem. Gas gangrene, although always formidable and dangerous, is found only in a relatively small number of cases. The expert care given our wounded in the fox holes and slit trenches by hospital corpsmen and medical officers, and the short time elapsing until they are transported by air to these luxuriously equipped Naval Hospitals, greatly influence their rapid recovery.

Penetrating wounds of the thorax, head injuries and wounds of the genito-urinary tract, after careful and skillful first-aid treatment at the front, are under the expert care of trained specialists at a base hospital within a few hours away. It is now generally accepted that the liberal use of the sulfonamides dusted in a wound greatly influences the state of contamination and delays infection. The thorough cleansing with sterile water or saline solution and the consequent removal of old blood clots, loose bodies and bits of clothing, together with skillful and thorough debridement still remain the methods of choice of most war surgeons. The oral and intravenous administration of sufficient sulfonamides to maintain adequate blood concentrations is a most valuable therapeutic adjunct.

The administration of plasma and prompt emergency treatment of his wounds, his immediate relief from pain by means of the convenient syrette, and his rapid evacua-

tion to the comfortable clean beds of the Naval Mobile Hospital, are a chain of events which has done wonders to maintain the morale of our fighting man. Too much credit cannot be given to the hospital corpsmen who crawl through the muck and mud of the jungle to administer to the needs of these wounded men.

In this war of scientific destruction let us pause and give thanks to that group of doctors, nurses and corpsmen from your town and mine whose military mission is not to destroy life but to preserve it, and who are doing a courageous and self-sacrificing job.

J. M. SCHMOELE,
Captain (MC) USNR.

EDITOR'S NOTE: Captain John Moore Schmoele, (MC) USNR, is Chief of Surgery at the United States Naval Hospital, Portsmouth, Virginia. A graduate of Washington and Lee University, he received his medical degree from the University of Pennsylvania. He was formerly Chief of Surgery at Advanced Base Hospital No. 2 in the South Pacific Area. Captain Schmoele's home is in Los Angeles, California.

Floral Eponym (17)

BAUHINIA

BAUHINIA is an immense genus of tropical shrubs, trees, and woody vines of the pea family, much resembling the redbud to which they are closely related. They are much planted in Southern California and Florida because of their showy flowers. The genus is named for the brothers, Jean and Caspar Bauhin, noted herbalists of the seventeenth century, the twin leaflets suggesting the two brothers.

Jean Bauhin (1541-1613) was the son of a French physician who was a Protestant exile in Switzerland. He studied botany at Tübingen under Leonard Fuchs. After traveling with Conrad Gesner, he began to practice medicine at Basle where he was elected professor of rhetoric. His great work, *Historia Plantarum Nova et Absolutissima* was planned to contain all that was then known about botany.

Caspar (1560-1624), his younger brother, studied medicine at Padua and Montpellier. He was successively professor of Greek, Anatomy, Botany, and Medicine at Basle. His most important botanical work was *Pinax Theatri Botanici*. His *Anatomica Historia* (1597) contains an interesting account of the ancient Hebrew myth of the bone of "Luz", the seat of the soul. He is also remembered as the editor of *Gynaeciorum*, a huge encyclopedia of medieval gynecology.

PLASTIC SURGERY OF SEVERE BURNS*

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and

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Severe burns constitute such a large proportion of casualties in the present war that it is proper that attention should be drawn to the problems of plastic surgery in severe burns. Severely burned patients also constitute a fairly large proportion of the daily census in many large civilian hospitals. Improvements in the primary care of the severely burned patient have considerably lowered the immediate mortality of burns so that now the surgeon is being forced to apply himself to the solution of many problems, both physiologic and surgical, in the late care of the burned patient. We are in firm agreement with Whipple¹ that these problems had best be tackled by the general surgeon whose training has been grounded properly in correct surgical principles of wound care, nutrition, etc., rather than delegate them to the maxillo-facial specialist. So many surgical problems have arisen in our experience in the care of severely burned patients, that we think it highly advisable that a general surgeon who has mastered the newer techniques necessary for the plastic repair of severe burns be made a member of a "burn team" in all civilian and military hospitals who must care for a large group of these patients.

We have outlined elsewhere our methods² for the primary care of severe burns. They embody, in short, the application of the pressure closed dressing principle described by Koch and Allen,³ after careful debridement of the burn. We believe that washing and excision is an important procedure in primary burn care, despite the fact that apparently excellent results were obtained by the Massachusetts General Hospital group when they omitted this step in their care of the victims from the Coconut Grove disaster. Washing a burn and excision of bleb skin is probably impossible to do in military practice in forward battle areas, but we believe that the general adoption of the attitude that this is a useless step would be a step backwards in the proper care of burns.

With the closed pressure dressing methods second degree burns (usually caused by boiling water or steam) heal amazingly rapidly, usually by the time the primary dressing is removed on the 9-14th day. Whole thickness burns (3rd degree) will not heal primarily; our impressions of how best to care for these burns form the basis of this report.

A. SPECIFIC CARE OF BURNED AREAS

All primary dressings are removed (at the 9-14th day) in a saline bath and the burned areas examined. Areas of partial thickness burns will be found to be healed, but the more deeply burned areas will already be seen to be sloughing. After removal of the patient from the saline bath, the burn surface is redressed with sterile *vaseline* gauze strips and an occlusive dressing. It is important that vaseline (rather than sulfanilamide-in-oil) gauze be employed in all except the primary dressings. When sulfanilamide gauze is used for long periods of time, although absorption is limited, the patient responds poorly. These saline baths and pressure-vaseline gauze dressings are repeated about every five days until the slough has entirely separated and granulation tissue has formed. Separation of the slough can be speeded up by careful excision of loose portions while the patient is in the saline bath. It is especially important to remove sloughing fascia as rapidly as possible; else a serious delay in skin grafting will result.

If the granulations appear to be "water-logged", the cause may be from

- (a) Hypoproteinemia and anemia, or
- (b) Dependent edema, or
- (c) Not enough pressure in dressing.

If (b) or (c) is the cause, usually the granulations can be "flattened out" by elevation of the affected part, or use of A-C-E bandages to effect more local pressure on the dressing.

Once the granulation tissue is clean and flat, skin grafting can be begun. Before we discuss the methods we have employed in skin grafting, some attention should be drawn to the problems of the general care

*Read at the annual meeting of the Medical Society of Virginia, at Roanoke, October 25-27, 1943.

of the patient during this preparatory, and grafting, period.

B. GENERAL CARE OF THE BURNED PATIENT

The more we see and care for severely burned patients, the more are we convinced that not enough attention has been drawn to the psychologic problems involved for the patient, the nurse, and the doctor. A severe burn results in severe psychologic, as well as physical, trauma. From childhood, we have been horrified by stories of fires and their effect on humans. Man and animal possess real, deep-seated fear of fire and its attendant effects. Therefore, it must be remembered that the burn patient needs all the assurance and mental help the medical services can provide.

First, the odors in the burn ward. No one who has not experienced the sensation gained on first going into a ward where several burned patients are being cared for can appreciate this problem. There is a peculiar odor in these wards, and "nauseating" does not describe it. Every effort (including frequent changing of air, distracting odors such as perfumes, etc.) should be made to keep the air in burn wards as "fresh" as possible. Adequate sunlight is a great aid.

The patient is encouraged and aided in keeping a high oral intake, preferably a high protein, high carbohydrate, high vitamin diet. This food may have to be prepared specially for the burned patient. Too often hospital food, though nutritious, has no appeal to the patient. Anything that will stimulate a flagging appetite is employed. Parenteral vitamin therapy is sometimes employed.

There must be at least a weekly check on the patient's hemoglobin and total protein content of the plasma. Burned patients practically all need whole blood transfusions and often. Children can safely be given 500 cc. transfusions, so small amounts of whole blood are not used. We have not had much difficulty in keeping hemoglobin and protein concentrations at an optimum level, except in a few patients. We are inclined to believe that hemoglobin formation is depressed by the absorption of products of disintegration from the burn surface, so an early separation of the slough is desired. If any infection persists, (even *B. pyocaneus*) in the granulating areas, the hemoglobin may remain low. The frequent use of saline baths is effective in keeping the hemoglobin levels up. We are now con-

ducting bone marrow studies on severely burned patients in an attempt to discover the cause of the severe depression of hemoglobin formation in certain patients, especially in the immediate period after the reception of the burn.

Every effort should be made to prevent contractures by properly splinting all affected joint areas at each dressing. Padded wooden and plaster splints have been employed by us.

One of the chief factors in lowering patient morale is the production of considerable pain in improper removal of dressings, or too frequent dressings. We have recently had referred to us a patient who was in mortal fear of having his burns dressed because he had suffered so much pain with this procedure. Simply placing the patient in a saline bath for 15-30 minutes before attempting removal of old dressings, and using an oily substance as the base of the ointment employed, practically allayed all pain in redressing the burns of this patient.

Several times we have noted that when a burn patient seems to be going down-hill, getting him up in a wheelchair for a few minutes each day gave much encouragement. This can be done when the occlusive dressing method is used.

A word about prevention of infection in the burn site. These large denuded surface areas will almost *certainly* become infected if the medical and nursing personnel attending to the details of bathing and dressing these patients fail to take every precaution to prevent mouth-borne infection. To our minds, the most important single factor in the prevention of infection of these areas is *the masking of all persons* who come in contact with these patients when the burned areas are uncovered.

Too much thought cannot be devoted to the problem of proper nursing care for burned patients. These nurses should be young, strong, kind, and sympathetic to the patient's requests and needs. If the nurse has these qualities, to her will go much of the credit for the successful treatment of these patients.

Caring for many burn patients is fatiguing, mentally and physically, for nursing and medical personnel, and considerable rest from such work may be required at times. The surgeon who treats many burns for months at a time may at times find himself experiencing bouts of a peculiar depression, from which he had best relieve himself by a short

vacation if his efforts are to be fruitful. Many nurses have told the speaker of similar experiences.

Once the granulation sites are free from all slough

tematic well-considered program for the individual patient. The technique is so easy to learn that the beginner is apt to feel that he can get good results



Fig. 1 (a & b).—Anterior and posterior views of 6 year old boy on whom small deep grafts (J. S. Davis type) were used. Boy is back at school with complete function of hands and arms 9 months after original burns.

and are uninfected, the plastic repair of the burn sites can proceed.

SKIN GRAFTING IN BURNS

Two relatively simple methods are available for the repair of large skin defects caused by whole thickness loss of skin in severe burns (in certain areas, so-called pedicle or sliding grafts must be employed for technical reasons. These are not considered in this paper.) These simple methods are (a) pinch grafts and (b) split-thickness grafts.

(a) Pinch Grafts

These small grafts may be of the thin (Reverdin) or thick (J. Staige Davis) types. We prefer the small, deep graft of J. Staige Davis, and have uniformly secured better results with it than with the Reverdin graft. They are used now only in burn patients who have lost so much skin that split-thickness grafts cannot be considered, or in grafting infected areas. In severe burns we are often left with no choice of donor site but must use what viable skin is left. This technique should not be employed in an haphazard manner, but in a sys-

tematic well-considered program for the individual patient. The technique is so easy to learn that the beginner is apt to feel that he can get good results



Fig. 2.—Photograph showing original extent of burns in patient shown in Fig. 1. Photograph taken 5 days after severe burns had been received due to clothes catching fire. All the area covered by the pressure bandages except the anterior right half of chest was involved.

ferred to a good description of the techniques of pinch-grafting in Horsley & Bigger's Manual on Operative Surgery⁴).



Fig. 3.—Evidence of poor cosmetic result in widespread, deep burn in young colored male. Original burns involved posterior portion of body as well as that shown.



Fig. 4.—The Padgett dermatome. A split thickness graft is being removed from the Dermatome.



Fig. 5.—Split thickness graft has been placed on a backing of fine mesh sulfanilamide gauze. When the pattern is cut free the graft and gauze are sewn in place on the burned surface.



Fig. 6.—The type of abduction apparatus used immediately after grafting of the axillary space. In this manner contractures are eliminated.

There are some writers who intimate that there is no longer any place for the pinch graft in the plastic repair of severe burns. This we believe to

be hardly true because with modern methods of burn therapy many burn patients are being saved in whom no other method but the pinch graft can

In Figure 1 is shown the result in a 6 year old child on whom pinch grafting was done. In all, eleven different operations had to be carried out.



Fig 7 (a & b).—Result with split thickness grafts in a severe mangle burn of the hand. Postoperative photograph taken 5 weeks after grafting.

be used. There is simply not enough skin surface left to employ any other method of skin grafting. This is especially true in children.

The original burn involved (Fig. 2) all the area covered by pressure bandages except the right anterior half of the chest. The functional result is excel-



Fig. 8 (a, b, & c).—Severe burn of knee and popliteal area treated with split thickness grafts. On the right leg can be seen the healed areas of the dermatome donor sites.

lent. This child is in school for full attendance exactly nine months after the burn was received. In Figure 3 is seen the final result in a young colored man who was pinch-grafted on six different occasions.

It will be noted that the cosmetic result is rela-

It is proper to emphasize that the best results, cosmetic and functional, in the plastic surgery of burns are obtained with the so-called split-thickness grafts. These can be cut from the donor site by several techniques, but most general surgeons can best develop skill in securing split-thickness grafts



Fig. 9 (a & b).—Severe burn of chest and axillary space treated by split thickness grafts. Patient's arm kept in abduction until healing was complete.

tively poor with pinch grafts. This is due to the fact that connective tissue growth with scar formation and contraction proceeds so much more rapidly than the outgrowth of epithelium from the implanted pinch grafts. So in pinch grafting the cosmetic result may be poor, but the measure is *life-saving* in widespread burns.

(b) *Split-Thickness Grafts*

by learning to use the Padgett dermatome (Fig. 4). This instrument allows the surgeon to secure grafts of 8x4 inches, of almost any thickness he desires from about .008 in. to .028 inches thickness. After these grafts are cut we have always placed them on a backing of fine mesh sulfanilamide-in-oil gauze which is sutured with the graft to the granulating surface (Fig. 5). All grafts are perforated before

they are sutured in place with a running simple suture of fine silk. By employing a fairly large number of simple interrupted Lembert fine silk sutures through the body of the graft we have been able so far to dispense with bulky pressure dressings which employ sea sponges, etc. The grafts are simply covered with layers of gauze and held firmly in place by pressure bandages. No saline dressings are used. Splinting and, in some cases, plaster casts are used to prevent motion of the grafted surface (Fig. 6). The sutures are removed on the fifth postoperative day. Vaseline gauze-pressure dressings are reapplied. With a successful "take", for example on the hand (Fig. 7), motion can be started

the calf, the dermatome graft should be used. Post-operatively, one sees much less tendency to ankle and foot edema after grafting procedures on the lower leg when the split-thickness graft is used (Fig. 10).

In probably no other place than the face is it so important that a split-thickness graft be used. Only with such a graft can a proper cosmetic result be obtained. If there must be reconstruction of ear or nose structures, these patients should be treated surgically by an adequately trained maxillo-facial specialist.

In large area skin defects in patients where adequate amounts of normal skin are left to secure



Fig. 10.—Result in use of a split thickness graft in complete circular burn of lower leg in a 60 year old man. Photograph taken 4 months after grafting.

on about the 14th postoperative day. After all dressings are removed, the patient is instructed to rub the grafted surface each day with lanolin ointment. Physiotherapy under proper supervision is started at about the 18-21 postoperative day.

When joint areas are involved, every effort is made to use split-thickness grafts, because the mobility of the joint is better with this graft than when pinch grafts are used (Fig. 8). In the case of joints, proper splinting during the preparation period for grafting is very important so that contractures are prevented. This is extremely important in burns about the elbow and the axillary fold (Fig. 9). When there is widespread loss of skin in burns of the lower leg, especially encircling burns involving

split-thickness grafts some of our most gratifying results in severe burns have been obtained. Figure 11 illustrates the loss of skin in a 59 year old man. Split-thickness grafts were employed on five different operative occasions. At a single operation 4 or 5 drums of skin may be cut. When large areas of skin are to be grafted at one operation the time of the operation and anesthetic period (3-4 hours) is necessarily long. We have been pleased to note the general better state of the patient when grafting is done under local anesthesia than when an inhalation anesthetic has been used for an extended period of time. When 4 to 5 drums of skin are cut at one operation, it is important to transfuse the patient with whole blood immediately after the operation.

Between operations in such cases, after the sutures are removed on the fifth postoperative day, the saline bath and vaseline gauze pressure dressing routine is carried out every fifth day, just as in preparing the burn site for skin grafting. Grafting is repeated every 2-3 weeks until the granulation sites are completely covered. The knees and elbows are kept splinted until physiotherapy can be started.

It is important that a word of caution about the

dressing is kept on continuously, the donor site epithelium becomes macerated, may then break down and become infected.

We have so far not felt it wise to employ a healed donor site for a second graft within less than 5-6 weeks.

With these methods of plastic surgery, the great majority of severely burned patients can be grafted soon after the burn has been received. Generally,



Fig. 11 (a & b).

(a) Severe deep third degree burns shown immediately after entrance to hospital. Burns extended from the axillary space to below the knee and to the midline anterior and posterior. There was complete sloughing of the skin and fascia in the burn areas.

(b) Results with split thickness grafts 4 months after discharge from hospital when patient was able to resume light work.

treatment of dermatome donor sites be mentioned here. Several surgeons have discarded the dermatome because of very slow or non-healing of the donor site. Usually in these cases the donor site has become infected, and one is left with a problem almost as difficult as the original burn. It is our impression and experience that the donor site dilemma in dermatome grafting has arisen because of removal of the initial dressings of this area at too early a date. Our only experience with donor site infection has come when some member of the house staff has either allowed the donor site to become wet (and infected) at the time the sutures are removed from the grafting site, or has removed the primary dressing too early. We employ regularly sulfanilamide-oil pressure dressings on the donor site. This should be left completely alone for 14 days. When the primary dressing is removed, healing is almost complete. As soon as possible, the donor site should then be left uncovered. If an oily

in widespread burns, the granulation sites will be ready for grafting not later than 4-5 weeks after the patient is burned. A delay longer than this simply invites trouble; unsightly scarring or unnecessary contractures will certainly result if grafting is delayed. *No magic ointment will restore skin when the burn is large and deep.* Adequate results in severe burns are obtained only with early and proper skin grafting.

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DISCUSSION

LT. COMMANDER ARTHUR J. MOUROT, MC., Norfolk Naval Hospital: I wish to congratulate Dr. Evans on his excellent results and his paper.

Formerly burn patients were admitted to any "dirty"

surgical ward and their care usually fell to an interne. But experience has proven the value of an experienced and cooperating burn team. At Norfolk Naval Hospital we have had such a team consisting of a general surgeon, a plastic surgeon, a laboratory technician and a physiotherapist since December 1, 1942. All burn patients are admitted to a special burn ward where every facility is available for their care and treatment.

We have used Dr. Evans' method of dressing burns and found it excellent in treating second degree burns, but rely more on early skin grafting when third degree burns are present.

Our cases are mostly patients with "flash" burns who are brought into the hospital one to four weeks after their initial injury. A high percentage of these cases are infected with hemolytic staph. aureus and hemolytic streptococci when they are admitted. We have found, both clinically and experimentally, wet dressings with 2 per cent acetic acid or azochloramide the best agents to clear up these infections. Even though infection is present, except on the hands and face where split thickness grafts are used, we begin skin grafting during the third week after the injury.

The British surgeons have had extensive experience in treating burns. They also advocate early skin grafting and have had moderate success with homogenous grafts when autogenous grafts were not available.

One aid in treatment of burns we have found useful is the use of ultra violet light irradiation to the burned area daily for several days prior to skin grafting. This stimulates granulations and aids in sterilizing the area to be grafted.

Before grafting is attempted the general condition of the patient must be built up as near normal as possible. Our patients receive a daily diet of 5000 calories which contains 200 gms. of protein. In addition they receive 6 to 8 eggs daily not only for their vitamins but mostly for their sulfur, adequate doses of ferrous sulfate, parenteral liver extract and multiple vitamin capsules. If the patient refuses or is unable to take this diet, a Miller-Abbott tube is passed and nourishment is given through the tube.

We keep the red blood count above 3 million cells and the Hb. above 65 per cent with frequent transfusions of whole blood. The plasma protein is kept above 6 mgm. per cent with blood plasma and amino acids. Occasionally, we have difficulty in locating veins as most of our patients have the neck, arms and ankles burned. In these cases we give transfusions either intrasternally or into the corpus cavernosus of the penis.

Before skin grafting is attempted an examination of the patient is made to determine not only what is to be done immediately but what unburned skin will be required for future reconstruction or plastic work on the face, ears and hands. Whenever such work is necessary, we preserve the skin of the abdomen as this location is most suitable for pedicle or flap operations.

Split thickness grafts are always used on the face and dorsum of the hands, but as Dr. Evans has stated, many

patients do not have sufficient unburned skin to graft all areas by this method. In these cases we have found Corachan grafts superior to the "pinch" graft. Its advantages are: (1) The donor area is only half as large as that needed for pinch grafts. (2) The donor area is sutured and heals by primary union. (3) Corachan grafts are easier and quicker applied. (4) Both the donor area and the grafted area are smoother and have a better cosmetic appearance than when pinch grafts are used.

We cover our grafts with perforated cellophane over which is placed gauze or mechanic's waste moistened with 25 per cent glycerine in normal saline. Compression is maintained with a cotton elastic bandage or cast.

I am very pleased that Dr. Evans is doing bone marrow studies to determine the etiology of the marked and rapidly developing anemia seen in severely burned patients. Some investigators have stated that this anemia is due to increased fragility of the red blood cells, but we have been unable to substantiate this finding. We have seen no case of clinical jaundice, hemoglobinuria or pink plasma. I stated in a paper written in January, 1943, that I thought this anemia is due to a toxin generated by the burned area which decreases the production of red blood cells and is not due to increased destruction of these cells. Naval regulations prevented me from making bone marrow studies.

In spite of using rigid sterile technique in dressing and redressing our burn patients, slightly more than 50 per cent of our third degree burns become infected. Meleney reported a similar high percentage of infection in 347 industrial burns. All of his cases were treated early, by skilled surgeons, under ideal conditions. Military surgeons, with few of these advantages, can little hope to lower this high percentage until some new drug or method of treating burns is discovered.

DR. EVANS, closing the discussion: I should like to thank Commander Mourot for coming so far to discuss this paper and for his excellent and intelligent discussion of this serious problem. One of the most gratifying observations one makes in going around to various Navy and Army hospitals is the exceedingly fine work being done by the surgeons attached to those hospitals on the problems of burns, shock, traumatic wounds, and so forth—not so much the fine technique but the fine understanding of sound underlying surgical principles.

Appropos to the serious anemia that does occur, recently we have studied in three patients the effect of liver extracts in such anemia. It is interesting to note that in these patients the reticulocyte count was zero before the administration of liver extract, but in three days had risen to five or six per cent. So there is some principle we are overlooking; and perhaps, as Commander Mourot has pointed out, liver therapy may be highly important in this peculiar anemia.

I was very interested to see Commander Mourot's photographs of the Corachan graft, which, as he stated, was first used in the Spanish Civil War by one of the surgeons attached to the Loyalist group.

DEMEROL—A SUBSTITUTE FOR MORPHINE IN SURGICAL PRACTICE*

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Some derivative of opium, and morphine in particular, has been the remedy of choice for the relief of pain for centuries, and no drug has supplanted it. Morphine, not unlike some personalities, has few evil traits that compromise its noble virtues. It has been next to indispensable to the physician. We believe the nearest approach to a substitute for morphine is Demerol, a synthetic drug in no way related to *papaver somniferum*.

Demerol is the first product of uniform chemistry which combines the spasmolytic property of atropine and the analgesic component of a morphine-like property. It was introduced by Eisleb and Schau-mann¹ in 1939 under the trade name of Dolantin, but pharmacologically it is ethylmethylphenyl-piperidinecarboxylate. It will be known in this country as Demerol. It is a white, crystalline substance, slightly soluble in water, with a strong alkaline reaction and a bitter taste. The hydrochloride is used for medical purposes.

Perhaps the most thorough and elaborate pharmacological studies available are those by Dugand and Heathcote of the Welsh National School of Medicine of Cardiff. We shall freely quote from their contribution, as there exists at present no better critical survey. Their experiments included action on erythrocytes, paramecium, the isolated heart, the rabbit, striated muscle, unstriated muscle, guinea pig intestine, anesthetized animal, intact frog and mouse. They state in reference to action on the mouse, "In general the effects of dolantol (demerol) on the central nervous system of the mammal may be explained as cortical stimulation followed by depression, together with a primary depression of the medulla. There is no evidence of any narcotic action of the drug as the animals show no symptoms of central depression until very late in the course of poisoning, when the degree of asphyxia present would be amply sufficient to account for it. With regard to the power of relieving pain claimed for the new drug, it is somewhat doubtful if any sound conclusions as to its possible action in this direction in man can be based on experiments in mice. Nonetheless, it was observed that it rendered the animals

less perceptive of what may be regarded as painful stimuli."

Among their conclusions they write, "It is non-hemolytic and has little action on unicellular organisms. It is a depressant to all forms of muscular tissue, striated, cardiac, and non-striated. As an anti-spasmodic drug it might well be found effective, in view of its antagonism to both para-sympathetic and plain muscle stimulants.

"It is relatively non-toxic, though it lowers blood pressure and depresses respiration. It is non-irritant and can be given subcutaneously, intramuscularly or intravenously. It is not narcotic in action but rather the reverse. There is evidence that it lessens sensitivity to pain in the lower animals."

Demerol (Dolantin in Europe) has been used extensively in Germany since its introduction in 1939, and numerous reports from that country attest to its efficacy in the hands of internists and surgeons. Schafer² had a large number of surgical cases in which he replaced morphine with Demerol. He states, "Dolantin (Demerol) does not act as an hypnotic: where a drug was desired to induce sleep, one of the barbiturates was given. In very severe pain, the effect of Dolantin—100 mg.—intramuscularly, was satisfactory and lasted about three hours. In less severe pain it lasts as long as seven to eight hours. Habituation or cumulative effect was not observed in a single instance. In most cases Demerol may replace opium."

Schlunbaum³ summarizes his experience as follows: "It possesses reliable spasmolytic effect, a strong analgesic effect, and frequently a sedative effect. It is tolerated locally and generally very well, particularly by children. There is no danger of cumulative action, no diminution of the effect if given repeatedly, and no danger of addiction."

In this country, Batterman and Milholland⁴ and Batterman and Hemmelsback⁵ report the extended use of Demerol, and summarize one contribution as follows:

"(1) Its spasmolytic action makes it ideal for the relief of conditions due to smooth muscle spasm in which morphine is pharmacologically contraindicated. (2) Its rapid dissipation tends to offset undesirable cumulative effects such as respiratory de-

*Read before the annual meeting of the Medical Society of Virginia, at Roanoke, Va., October 25-27, 1943.

pression and urinary retention. (3) Prolonged use of Demerol may lead to the development of habitulism, but it appears to possess a lesser liability than morphine for the development of physical dependence."

We have been using Demerol in a surgical practice for more than a year and, while we have not kept a detailed report of each individual dose or patient, we have well-defined impressions in a series of several hundred cases. We have furnished the drug to some confreres and have their reports, several of which we consider particularly illuminating.

For the relief of pain, particularly of a spasmodic character, such as renal or biliary colic, it is a very satisfactory substitute for morphine. The dose has been 100 mg. hypodermically or intramuscularly. The pain has been controlled in ten to twenty minutes and relief has lasted two to four hours. In a few cases, a sense of flushing or dizziness was noted, but neither nausea, vomiting, pruritis, or excitation developed in any case. Demerol does not induce sleep, but sleep frequently follows the relief of pain. Following operations, it is given every three or four hours during the first 24 hours, its administration being left to the discretion of the nurse—then about twice in the next 24 hours. Thereafter, mild sedatives are substituted and usually suffice.

We have found Demerol particularly useful in those patients who tolerate morphine poorly or have an idiosyncrasy for the drug. In not a single instance have we met a symptom, following its use, which was alarming. If any idiosyncrasy exists, we have failed to meet it in over a thousand administrations. In about ten per cent of the cases in which it is used, it did not prove as effective as morphine. It is very possible the dose was too small, but we have leaned toward the cautious side. It is our impression that 100 mg. is about equivalent in action to 1/6 gr. morphine and 1/100 gr. atropine combined. We believe 125 or 150 mg. will prove to be a better dose, but do not advise this dosage at present. It may be used orally in tablet form. Clinical experience will be the answer.

We have not seen the depression in respiration, cyanosis, pruritis or excitation which is occasionally noted after the administration of morphine following the use of Demerol, possibly because we have been satisfied with a conservative dosage.

Our experience is limited almost exclusively to surgical cases. In about fifty cases in which it was

used as a part of the preparation for a general anesthetic, it seemed to relax the patient but did not produce narcosis to any degree. Combined with one of the barbiturates, seconal for instance, it formed a most satisfactory substitute for morphine and atropine, and we believe it can be relied upon to eliminate the excitation and nausea that sometimes follows the initial dose of morphine.

Post-operatively, we have found it most efficient, and, as we have stated, we believe a wider experience will dictate a little larger dose than 100 mg.

We have used Demerol for several months in chronic surgical cases without increasing either the quantity of the drug or reducing the interval between doses. We furnished Demerol to a physician whose wife had metastasis in the spine and pelvis secondary to carcinoma of the breast. He found that she could not tolerate the large doses of morphine or Schlesinger's solution necessary to relieve pain, but found that Demerol was the only drug which relieved pain and at the same time did not cause nausea. It was used to the exclusion of all other analgesics during the last few months of her life.

Another case in point is that of a nurse who had her second abdominal operation. In the first operation, she found relief from pain with morphine, but its administration was attended with nausea. In her second operation she had two hypodermic doses of Dilaudid, 1/32 gr. each, with incomplete relief. Demerol was substituted without her knowledge, but she immediately detected the difference and insisted on its use. She stated that relief of pain was complete in ten to fifteen minutes with a feeling of complete relaxation, at times attended with a sensation of a mild subcutaneous warmth.

Concerning creating dependence on the part of the patient—addiction or habituation, in other words—there seems to be some difference of opinion. One thing is certain; its use does not create that insatiable desire for its continuation that is so common with opium derivatives. The obvious explanation is the failure of Demerol to produce euphoria, at least in the hospital patient, and this is an asset rather than a liability. It merely relieves pain and does not bring that sense of well being and exaltation that follows the habitual use of opium. Demerol will not replace morphine in those addicted to its use.

In conclusion, we would stress several points: Demerol has an analgesic and spasmolytic action,

resembling combined action of morphine and atropine. It is not a sedative or somnifacient in their strict meanings. Sleep often follows its use by the relief of pain.

It is well combined with a barbiturate in the pre-operative preparation. It is distinctly indicated in pain due to spasm of involuntary muscles such as renal and biliary colic. It is quickly eliminated by the liver. It is not toxic in the dose recommended—100 mg. hypodermically or intramuscularly. It can be given by mouth in relatively larger doses. There may be a slight risk of habituatism but nothing approaching the tendency attached to morphine usage.

Its pharmacological action has been thoroughly studied and it can be recommended as a safe drug for the conditions enumerated. In other branches of medicine, reports indicate it has proven a most welcome addition to our *materia medica*.

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DISCUSSION

DR. H. H. WARE, JR., Richmond: Dr. White is to be congratulated for presenting a report of his observations on the use of demerol in a large group of cases. It seems evident that demerol is another valuable addition to the list of drugs used for the relief of pain; and it apparently has very few unfavorable reactions. The absence of un-

favorable reactions increases the value of this drug in gynecological and abdominal cases.

You may be interested to know what this drug will do in obstetrical cases. Drs. Roby and W. R. Schumann, of Boston, reported its use in 112 cases. Unfortunately, they were unable to show what the drug will do when used alone, because they gave scopolamin along with it, so that the effect was almost like twilight-sleep. They think that demerol is safe in obstetrics. Drs. Gibson and Dixon, of Baltimore, reported 150 obstetrical cases in which demerol was used. They reported that 54 primiparas received 100 mg. or more, and the average duration of labor in this group of cases was four hours and fifty-four minutes after the drug was given. In the cases Drs. Dixon and Gilbert report, the drug was given alone in 70 cases in an attempt to evaluate the effect of this drug on the babies. In doses of from 100 mg. to 400 mg. no effect on the baby was noted. It was their impression that the drug probably hastened the process of labor, perhaps by relieving the patient of pain, and allowing her to progress a little more rapidly because she could use her uterine contractions to better advantage. They found that the drug was probably most satisfactory when given intramuscularly, although they gave it orally in some cases. Larger doses have to be used, however, when it is administered orally. The incident of post-partum hemorrhage was not increased when demerol was used, and the third stage of labor was short.

I enjoyed Dr. White's paper and wish to thank him for presenting the results of his investigation.

DR. RICHARD MASON, The Plains: I should like to ask Dr. White, first, what he thinks of this new drug in regard to its effect on the secretions, as compared to morphine and the other opiates. Does it produce constipation and that sort of thing, as the opiates do?

I should also like to ask him where we could obtain this drug if we wanted to use it.

DR. WHITE, closing the discussion: I wish to thank Dr. Ware for his remarks.

To Dr. Mason I would say we have not noticed the constipation that follows the use of morphine, and I do not think demerol has much effect on the secretions. It may diminish them slightly. I am not qualified to express an opinion on the effect on the nose and throat secretions.

It is hoped the commercial package will be available shortly.

RECENT PROGRESS IN PHYSICAL MEDICINE*

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The last 25 years have brought spectacular development of a large variety of physical treatment measures as well as their widespread employment by the medical profession. Physical therapy became the cornerstone of physical restoration during and after World War I, and, as a result, in the present gigantic global conflict, the American Army has moved physical therapy from base and reconstruction hospitals right up to station and field hospitals all over the world. A crying demand exists now for more physicians and more technicians trained in physical therapy to administer such treatment to the countless thousands of injured and otherwise disabled. In war plants as well as in most general hospitals physical therapy departments have become indispensable as aids in the routine treatment of traumatic, arthritic, neurologic and many other special conditions.

In presenting the highlights of the more recent advances in this branch of therapeutics, it appears practicable to consider the question from two angles: the first, newer physical therapy methods; and the second, methods and techniques applicable to special fields in medicine.

THERMOTHERAPY

Thermotherapy or the employment of heat in its various forms is still the most universally applied physical treatment method. Heat when employed in mild intensity acts as a sedative on sensory and motor nerves; in more intense dosage it helps to accelerate circulation and helps in the absorption of products of inflammation; finally, in case of thermolabile organisms as the gonococcus, heat in sufficient intense degree acts as a bactericidal agent without impairing the human organism. Two forms of conductive heating have become increasingly popular in recent years, the whirlpool bath and the paraffin bath. The whirlpool bath, consisting of water at a temperature of 105° to 110° F. which is kept whirling in a small tank by its own pressure or by a motor, combines gentle friction with

sustained heat and also allows active exercise under water, especially in recent traumatic and arthritic conditions with swelling and limitation of motion. The paraffin bath employs melted paraffin at a temperature from 110° to 125° F. preferably controlled thermostatically; it is more useful in chronic traumatic and arthritic conditions.

Short-wave diathermy was hailed, a few years ago, as a new thermal method of specific bactericidal and selective heating effects. Seasoned clinical and laboratory investigation has divested short-wave diathermy of these enthusiastic claims, but has fully established its value as a fairly safe agent for deep tissue heating, offering the convenient new technics of air spaced electrodes and of inductance coil heating. Efforts to introduce dosimeters into short-wave diathermy which will estimate dosage in the same manner as the milliammeter in long-wave diathermy, have been unavailing; as a matter of fact, the older method of heating by metal contact plates may be still considered superior in treating bursae and joints in such locations as the head or neck, where unnecessary heating of adjacent structures is to be avoided, or in treating heat sensitive patients.

Artificial fever therapy developed in the United States as a direct outgrowth of diathermy; later hyperthermy by air-conditioning and by hot water spray developed. At this time it is generally agreed that various methods of fever therapy can produce equally good results, as long as there is a suitable combination of elevation of temperature and its retention by insulation chiefly in cabinets. The original spectacular results in gonorrheal infections have been largely superceded by similar results by the much less cumbersome use of sulfa drugs; nevertheless, fever therapy still plays an important role in cases resistant or intolerant to sulfa medication. In cerebrospinal syphilis and its sequelae, in chorea, intractable bronchial asthma and selected rheumatoid conditions, artificial fever therapy has become a standard method of treatment, with a general tendency towards the use of less severe fevers, in degrees from 103° to 105° maintained for 3 to 5 hours.

*Read before the Richmond Academy of Medicine, Richmond, January 25, 1944.

HYPOTHERMY

Hypothermy or the therapeutic use of cold has come to the fore in recent years, largely stimulated by clinical research of Fay and Smith. Here, again, the original claims for some specific action in inoperable malignancies have been abandoned, but, on the other hand, the scope of employment of hypothermy in military and industrial surgery and in peripheral vascular disease is still expanding. These uses are chiefly based on the fact that the employment of cold lessens the oxygen need of cells and decreases local metabolism; therefore, in treating gangrene in cold injuries and in burns, mild refrigeration helps recovery. On the same grounds a new conception of shock substitutes cold for heat in its treatment. For amputation of gangrenous extremities, an efficient technic of refrigeration anaesthesia has been developed. The techniques of hypothermy are still under development, at present either direct packing with ice or mechanic refrigeration being employed.

ELECTROTHERAPY

In the field of electrotherapy, besides the development of short-wave diathermy, recent progress concerns itself chiefly with the extended use of the time-honored method of iontophoresis or ion-transfer by galvanism and with the new method of electro-shock therapy by a low frequency current applied to the brain. As to ion-transfer, it has been shown anew that by the application of the basic law of electrophysics, "like charges repel, unlike charges attract", electro-positive and electro-negative substances can be introduced through the skin and that such electrophoretic introduction of foreign substances into the skin is followed by diffusion, adsorption and precipitation; also, that effects on deeper tissues are possible with drugs controlling pathways between the skin and internal structures. Extensive work has been done with vasodilating drugs, such as histamine and the choline derivatives, notably mecholyl. Favorable clinical results are being reported with both of these drugs in vascular spasm and fibrositis, neuritis, joint exudates in traumatic and rheumatoid arthritis, also in skin ulcerations. Histamine exerts a more intensive reaction and must be used for short applications only; it is generally preferred in applications to muscles; mecholyl requires more prolonged application and may exert systemic effects.

Copper ionization has been favorably reported in fungous infections of the hands and feet. The recent literature contains favorable reports on the relief of migraine and headache by histamine ion-transfer, of severe asthma by epinephrine ion-transfer, or arthritic pain by mecholyl and histamine ion-transfer, of muscular spasm by aconitine ion-transfer and of keloids and scleroderma by iodine ion-transfer.

Concurrently with ion-transfer by the galvanic current, renewed interest has been shown in the form of local or general body treatment by hydro-galvanic baths. Such treatment has been found useful in generalized, as well as local arthritic and neuritic conditions, in war injuries and nervous exhaustion following war strain.

The method of inducing convulsions by means of an alternating current applied to the brain came about as an evolution from the more hazardous drug administration for shock therapy in mental disorders; it repeats the similar transition from drug therapy to physical therapy when physically induced fever therapy largely replaced malaria therapy. Electric shock therapy has proved especially applicable to the early stages of depressive mental conditions, in psychoses associated with alcoholism and in other toxic-organic psychoses; it has also been reported effective in acute mental depression due to the war, formerly misnamed shell-shock; the majority of patients with a good previous personality have been showing rapid improvement under such treatment.

ULTRAVIOLET RADIATION

Ultraviolet radiation has found a new field of applicability for air sterilization of operating rooms and for prevention of cross-infection in children's wards. Generators emitting almost exclusively the short ultraviolet radiation of 2,537 Angstroms serve for this purpose and the same type of radiation emitted from single treatment units has been also used with good success in superficial skin infections and for stimulation of sluggish wounds. After resumption of manufacturing for civilian needs and more clinical research there will be undoubtedly more interesting development in the field of actinic radiation.

HYDROTHERAPY AND SPA-THERAPY

The development of under water exercises in therapeutic pools has brought hydrotherapy into ex-

tensive use again. Originally introduced for the redevelopment of muscles weakened by infantile paralysis and unable to work against gravity outside of the water, pool exercise has been found useful in treatment of the sequelae of many traumatic conditions, of hemiplegia and chronic arthritis. The dramatic effects of early treatment by the Kenny method have definitely helped to curb the tendency of erecting too many costly pools, for much of this type of work can be done intelligently and more inexpensively in smaller units of the Hubbard tank type.

Spa-therapy, a long neglected field of combined physical therapeutic and medicinal activity, has been brought into the foreground of interest by two important developments of recent years. Informed physicians have demanded for a long time that the medical profession as a whole should take more active interest in American Spas, as potential assets of our national health system; as a result, three years ago the American Medical Association created a Committee on Health Resorts with the aim to survey American Spas and endeavor to bring their service to the sick to acceptable uniform standards. Quite recently, the matter of more extensive and more effective use of our Spas has been precipitated by the fact that the Army, Navy and Veterans' Administration took over a number of well-known resorts for active utilization in the rehabilitation of the war disabled. It is to be hoped that under the impetus of these new developments a new era of a more general and more intelligent use of our health resorts will arise, instead of their misuse by the idle rich as society playgrounds or by commercial exploiters for much valueless treatment.

EXERCISE

The institution of a nation-wide program for rehabilitation of those disabled by war and war-connected industrial activity has also brought about widespread attention to the importance of exercise and physical fitness. Instead of much of the cumbersome passive therapy apparatus of former years, the tendency is to use early active exercise without any apparatus, and later either active exercise apparatus of simple construction or various devices of the curative workshop principle, aiming to restore function as well as the individual's habit of work. All this leads to an increased tendency to combine

physical therapy with occupational therapy under competent medical direction.

Concurrently with the development of newer methods of physical medicine and better understanding of the time-honored ones, certain trends became more and more pronounced in the therapeutic management of some of the conditions in which physical therapy plays an important role.

THE KENNY METHOD

In the early treatment of infantile paralysis, the physical treatment procedures evolved by Miss Kenny evoked much professional and popular interest. They consist briefly of abandonment of all rigid immobilization, of early treatment of all affected muscles by moist hot applications and by the institution of early carefully guided exercise. Extensive clinical observations corroborated that such treatment tends to relieve pain and muscle spasm and almost abolishes, or at least greatly diminishes, the incidence of contractures, joint deformities or spinal curvatures. However, it does not decrease the extent of late paralysis. The fairly general acceptance of the Kenny procedure revolutionized the early treatment of infantile paralysis as much as the discontinuation of prolonged immobilization changed the treatment of fractures some years ago. On the other hand, the new "conception" of poliomyelitis announced by Sister Kenny involving such terms of "mental alienation" and "incoordination" does not seem to have found as much corroboration by intense laboratory studies, as did the clinical results claimed for this method of treatment.

PERIPHERAL NERVE INJURIES

In the management of peripheral nerve injuries much recent study was devoted to determine the value of early, intensive stimulation of muscles by electricity. There are now several well supported newer experimental studies on record that such treatment is of definite value in conserving the function of muscles and in hastening recovery. In all cases of peripheral nerve injuries, whether suturing is done or not, physical therapy must be promptly initiated so that when the nerve regenerates it will activate a mechanism capable of adequate movement. In the various types of traumatic neuritis, including Bell's palsy, early and consistent use of physical measures, proper splinting, mild heating,

and later suitable exercise have gradually become to be regarded as standard forms of treatment.

CHRONIC ARTHRITIS

In the treatment of chronic arthritis and rheumatoid conditions, physical measures have found a steadily increasing appreciation, in direct ratio to the decline of faith in the wholesale removal of supposed foci of infection and in allegedly specific vaccines. The present generally followed plan of treatment of chronic arthritis includes the combating of the known etiologic factors as well as the employment of all effective means for the restoration of function and relief of pain in the joints. It is universally agreed that physical measures have the unique capacity of influencing the general condition of arthritics as well as their local changes, if the latter are not too far advanced; the extent of stimulation as well as sedation by physical measures can be fairly well regulated individually and there is a large choice of time-proven as well as newer physical measures available. Most of these newer physical measures have already been enumerated; thermal measures, the paraffin bath for thickening of soft tissues in hands and feet, either form of diathermy for swelling of larger joints, under water exercises for joint stiffness; counter-irritant measures; mecholyl ion-transfer for stubborn cases of rheumatoid arthritis and neuritic conditions; histamine ion-transfer for rheumatic myositis; finally, the galvanic bath, either locally or generally applied.

Increasing emphasis has been laid in recent years in the properly directed home treatment of chronic arthritis, because of its essentially chronic course and the grave economic problem often created by the length of treatment. In many cases of chronic arthritis, especially the early rheumatoid type, no matter how expertly done, diathermy or ion-transfer applied once or twice a week in a physician's office is not as effective as mild heat treatment applied daily or several times a day, followed by gentle massage and suitable exercise. Heat lamps, paraffin packs and whirlpool baths may be all employed in the home; members of the family may be instructed in a simple massage routine, in putting joints through the fullest possible range of motion and in carrying on suitable walking and postural exercises, provided that there is continuity of active medical supervision and interval treatment at the office.

PERIPHERAL VASCULAR DISEASE

In peripheral vascular disease physical therapy has become an indispensable part of the general medical management. In prevalence of vascular spasm, such as in Raynaud's disease, ion-transfer with vasodilating drugs is being usefully applied; the same method has also been reported favorably in scleroderma and thrombophlebitic indurations. In organic occlusion the best known means for developing collateral circulation are controlled local heating and passive vascular exercise. In early cases often complete functional recovery can be achieved, but even in the presence of ulcerations and gangrene physical therapy presents a fair chance to avoid amputations.

A similar useful and often indispensable role of physical measures can be made in many of the everyday conditions in gynecology, proctology, the genitourinary field, and in dermatology, ophthalmology and oto-rhino-laryngology, as proven by the increasing number of contributions on the use of physical agents by the specialists in these fields.

COMMENT

In spite of the impressive progress being made in many large centers in both research and clinical application of physical measures, their rational and efficient use by the general medical profession is still far from satisfactory and the problem of education still looms large. A frequent objection voiced by the uninformed is that physical therapists concern themselves with all too many pathological conditions, instead of remaining within a well-circumscribed domain. No such objection is voiced against the similar wide use of drug therapy in all departments of medicine. Dean Sollman stated before the American Congress of Physical Therapy, ". . . although drug therapy and drugless therapy may seem direct antipodes to the superficial thinker, they involve the same principles, evoke the same phenomena, accomplish the same results. They differ only in the means which they employ, of which sometimes the one, sometimes the other is better adapted to secure the desired end. Indeed, the differences between physical therapy and pharmacological therapy are no greater than those between radiant and direct heat, or between local and general anesthetics."

The general practitioner should be able to employ

simple thermal and hydriatic measures at the office and at the bedside of patients and to demonstrate and prescribe simple exercise for traumatic, arthritic and other every-day conditions. He should employ more elaborate apparatus only if he has had competent clinical instruction in their use and can himself devote either the necessary time or effectively supervise their application by his well-trained technicians.

Specialists in various fields of medicine, such as surgery, orthopedics, gynecology, the nose and throat, and dermatology will all derive great satisfaction from such physical measures as are applicable to their respective fields, once they acquire theoretic grounding and at least the rudiments of clinical training in their employment.

There is need in every large center of population, and certainly in all large hospitals, for medical men with special training in general physical therapy who are able to render broad service with such modern resources as fever therapy, under water exercise,

and some of the electric and light treatments. Special training and aptitude, as well as official support, are needed to carry on clinical observation and experimental research and to check on the claims for the ever-increasing number of new devices.

Unbiased observers agree that much further progress can be expected from physical medicine once it has become possible to overcome the still existing lag in teaching in medical schools and more systematic research work is instituted in properly equipped and staffed institutes of Physical Medicine. The most timely establishment of the Baruch Committee on Physical Medicine with a membership of distinguished clinicians and educators for the survey of the field of Physical Medicine, therefore, marks a potentially important step forward. The published results of this survey will undoubtedly stimulate definite action leading to further progress.

2 East 88th Street.

Georgia Warm Springs Foundation.

The annual report of the Foundation for the fiscal year ended September 30, 1943, reveals that during the year 541 patients from thirty-seven states in the country received treatment, and of that number, 346 patients (or 64%) received financial assistance. These Aid patients received 25,038 hospital days' care, or 79.16% of the total 31,628 days' hospital care given all patients.

Of the 541 patients in residence during the year, 261—or nearly half—were in the age group of 10 through 19 years. Of the remainder, 155 patients ranged from 20 through 38 years; 106 were under 10 years, and 19 were over 39 years of age.

The financial statement discloses that grants received from The National Foundation for Infantile Paralysis, Inc. were: \$225,000 for general purposes, for the year beginning October 1, 1943, and \$43,480 for educational purposes for the year beginning July 1, 1943. Revenue from patients and other

activities at Warm Springs, plus donations and bequests totaled \$234,123.36. Excess of expenses over revenue, exclusive of grants, for the year ended September 30, 1943, was \$164,146.02.

Organized in 1927 under the guidance of President Roosevelt, the Georgia Warm Springs Foundation is a non-stock, non-profit organization, developed for the two-fold purpose of using the natural facilities at Warm Springs and the skill of a carefully selected professional staff for direct aid to patients; and secondly, to pass on to hospitals and the medical profession any observations or methods of proven merit resulting from research which might be suitable for practical application elsewhere.

No distinction is made in the care or housing of patients, whether they pay their own expenses or receive full or part financial aid, and the particular classification of each is known only to the officers in charge of financial arrangements at the institution. No profit is derived from any patient.

A CASE OF SYPHILITIC PARALYSIS CURED BY FEVER*

J. O. FITZGERALD, JR., M.D.,
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In 1930 a family consisting of husband, wife and two children became my patients. They were seen at irregular intervals for varied ailments. In 1931 a father-in-law joined the group. He was senile, unable to care for himself properly, and had a positive Wassermann. He was nursed largely by the daughter-in-law. His condition grew worse and in 1933, after consultation, a "Commission" was called and he was committed to a sanatorium for mental diseases, as a paretic.

The family was naturally anxious and excited. Wassermann reactions on blood from each were negative.

Mrs. D. J. (the wife), who was in her late 30's, began to feel badly in June, 1933. She lost weight, was nervous, slept poorly and had some pain through her lumbar region. Her basal rate was found to be above normal and she was advised to rest more, and was started on iodine.

On October 9, 1933, her blood Wassermann was repeated and found negative.

She had improved and was not seen again professionally for about one year when she returned complaining of aching through her lumbar spine. Her x-ray at this time showed arthritis in her lumbar region with spurs. There were periods of comfort interspersed with periods of increased pain through her lumbar region, thighs and legs.

She was seen a few times in May, 1934. In November, 1934, she returned with definite defect in her locomotion and a suggestive gait. Blood was again taken and her Wassermann reaction was "one plus". She was given a series of arsenical injections. In February, 1935, her blood Wassermann was negative. There was improvement in her walking and a definite decrease in her pains. She refused a spinal tap. Mixed treatment was continued through 1935. During this time there were three negative blood Wassermans.

Here, the family moved out of town and she was not seen again until June, 1936. Her complaints were referred to her spine and thighs; they consisted mainly of pain and upset locomotion. I insisted on a spinal, which she refused, and she failed

to return until July, 1936. Her symptoms continued to be her spine and thighs and she walked with difficulty and only with aid, and because of her negative blood Wassermans she almost childishly insisted her condition was arthritic. From this time until September 3, she had walked only with aid of two people, one on each side, and then with a dragging gait and difficulty.

She gave up all her duties in this period and was generally worse. September 3 she consented to a spinal puncture. Her blood Wassermann was negative but the spinal fluid was positive—being a plus three—and the colloidal curve was that of paresis.

She was studied generally and found to be suitable for it and was brought in for general fever therapy. These treatments were given in one of my office treatment rooms.

The patient was in at 8 A. M. Her previous preparation each time was about the same as would be given before a major surgical procedure—laxative, sedative, abundant fluids, NaCl, etc. She was well insulated, using large heavy Turkish towels next to her body surfaces for absorption of excreted fluids. The current was turned on and her body temperature was gradually raised to 103° to 104° F., where it was maintained until 3:30 P. M., when the current was gradually turned off and she was allowed to return to about normal. During the treatment from 1000 to 3000 c.c. of normal saline iced lemonade were given. Sodium amytal was given at the start and again about noon. During the treatments the patient had both myself and a nurse present all the time and both were always immediately available.

Treatments were given 9-15-'36
9-19-'36
9-22-'36
menstruating
10-13-'36
10-17-'36
10-20-'36
10-24-'36
10-31-'36
11- 3-'36
11-10-'36.

*Read before the Richmond Academy of Medicine, January 25, 1944.

Here the patient walked in and refused to take further treatment. There was a gratifying and satisfactory improvement in relief of pain and improvement in her walking.

She was kept under reasonable observation until May, 1939. Blood Wassermann reactions continued negative. There were three spinal fluid Wassermann and colloidal gold reactions—the last of these in May, 1939, and they were all negative.

She was at that time employed and had been for about two years. She was active and had no unusual pains, her gait was normal, and mentally she was normal. Since that time she has been reported as continuing her activity without handicap. I believe that we are justified in classifying her as cured. Since there have been no more arthritic complaints, this may also have been helped to some extent—I do not know.

Several things which I wish to mention are that this was done over seven years ago when we were less certain that fever therapy with its dangers was an institutional procedure.

I was somewhat like the bumble bee: you know the engineers, taking into consideration the bumble bee's weight, his wing surface, etc., figure it all over

very carefully and say it is physically impossible for the bumble bee to fly. But the poor ignorant bumble bee does not know all this, so he just keeps flying. I, not knowing all these dangers, etc., just went along and gave the treatments in my office.

The fevers were not carried as high as they usually are—due to my temerity from knowing some of the possibilities from high fevers. The fever was produced by simple short-wave diathermy plus plenty of insulation and, while it was done in my office, we were constantly in attendance.

The patient refused to submit to the number of treatments suggested.

Perhaps I am "sticking my neck out" to say that she was cured, but she has been symptom free for more than seven years.

Serologically, normalcy existed for about three years and has not been checked since. While the origin of her infection is not known, the father-in-law is a suggested probable source of innocent infection.

Finally, this case has not been reported as a rare, unusual one, but as one which any of us may and do see fairly frequently in routine practice.

1103 West Franklin Street.

Sea Bathing Aids Convalescence.

Now is the time when the seashore begins to beckon. In *The Journal of the American Medical Association* for April 15 Charles I. Singer, M.D., Long Beach, N. Y., and Kenneth Phillips, M.D., Miami, Fla., cooperate to explain the health values of sea bathing. Their report is part of a study of health resorts made by the Committee on American Health Resorts of the American Medical Association. Sea water is a compound salt solution containing a great variety of metallic substances but absorption of these mineral substances into the body does not occur even with prolonged bathing. Therefore the chief values of sea bathing are attributed to the temperature of the water, the difference between the temperature of the skin and that of the water, the slightly irritant effect of the salt content on the skin, the mechanical stimulation by the waves of the surf, the effects on the body of exposure to

air and sun after bathing and, finally, the effects of the sea breeze. Minor amounts of iodine in the air and the drinking water near the seashore also may have beneficial effects.

Among conditions which seem to be beneficially influenced by a stay at the seashore in summer are those in which the human being has been exhausted by the strain of modern life so that he is nervously exhausted. A seashore rest is also beneficial for convalescence after any disease that had helped to break down resistance.

People with tuberculosis or excessive action of the thyroid gland or heart conditions may be injured by attempts to utilize the value of the seashore in a northern climate. Particularly important, however, in the values of the seashore for health is emphasis on the duration of the stay; to get good effects anywhere from six to eight weeks may be required.

THE TREATMENT OF CERTAIN MENTAL DISORDERS BY PSYCHO-SURGERY*

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"PSYCHO-SURGERY", a word accredited to Freeman and Watts, simply means surgery on an anatomically intact brain. They state that the procedure is similar to a sympathectomy or to the cutting of pain pathways in the central nervous system for the relief of pain, in that anatomically normal structures are sacrificed in the interest of the patient's health.¹

The procedure, used in the treatment of twelve cases which we will review in this paper, is known as prefrontal lobotomy—it is the cutting of the pathways in both prefrontal lobes. It is said to interrupt the connection between the prefrontal lobes and the thalamus,² and is the latest method for the surgical relief of mental pain. In most instances it reduces the emotional reaction of the patient with reference to himself and, although these mentally disturbed patients often continue to have their delusions or hallucinations after the operation, they are less concerned with them and are able to pay little or no attention to their abnormal mental content.³ In some instances following operation, patients begin to show interest in performance of productive work, where no such interest existed before lobotomy.⁴

The operation is a sequel to the work done by Burckhardt⁵ in 1891 and to that of Puusepp⁶ just before the last war. The present procedure was originated by Egas Moniz⁷ in 1935 and has been popularized by the daring work of Freeman and Watts, who did the first operation of this type in this country in 1935. Their work has become an accepted practice and is now being used more extensively. (It was also in 1935 that Dr. William J. Mayo anticipated attacking the problem of mental disease by surgical measures applied to the brain.⁸ In 1942 Freeman and Watts published the largest series of cases of prefrontal lobotomy found on record—136 in number—with the best results obtained in the agitated depressive cases.⁹ The work of others has confirmed these results.¹⁰

For a long time the frontal lobes have been considered as the portion of the brain most concerned with personality. It is generally believed that it is by means of the frontal lobes that we are aware of sensations and are able to anticipate what may happen if certain sensations continue.¹¹ In other words, the frontal lobes, through their connections with the thalamus, appear to have direct control over affect and any alteration of the tracts involved produces an alteration in personality and in emotional response.

In most cases where prefrontal lobectomy has been performed because of traumatic, neoplastic, or infectious lesions the mental state has been improved. In prefrontal lobotomy no tissue is removed and a change in the personality function is the primary aim.¹²

In this paper we will give a preliminary report of our twelve cases with the results obtained when prefrontal lobotomy was performed. The cases were carefully selected. Eight of them were cases of agitated depression which is generally considered to be the most favorable type of case for this procedure. The surgery was done by Doctors C. C. Coleman and John M. Meredith, of the Neurosurgical Staff of the Medical College of Virginia Hospital. Surgical technique will not be discussed in this paper. The operation can frequently be performed under local anesthesia, shock from the operation is minimal, and there has been no surgical mortality in our cases, but it must be remembered that our series is small.

In practically all of the cases of agitated depression, there was little or no restlessness immediately following the operation. The patients frequently were disoriented, were usually incontinent but they were quieter, more coherent, more accessible and in about ten days they were able to be up and out of bed. The most striking effect noted was the absence of concern and the shallowness of the emotional reactions. Many of these miserable, unhappy, restless individuals who paced the floor wringing their

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hands, moaning, groaning, sometimes yelling and screaming, practically always inaccessible and uncommunicative, were transformed into quiet, placid, uncomplaining persons who showed little concern about their troubles. Incontinence following the operation is a common and annoying symptom, particularly to the family; the patient is quite unconcerned about this as he is about everything. The incontinence is considered by some as a good prognostic sign.

The striking fact about the result obtained in these cases is that all of them showed some degree of improvement and all save one have made a social recovery and have been able to remain in their homes. The last report from one of our most recent cases, who did exceedingly well immediately following the operation, is that he is beginning to be concerned by his delusions and hallucinations and, should this continue, institutionalization may become necessary. Some of our cases showed only a little improvement until several weeks after the operation and several of those whose improvement was slow have made greater improvement than others whose improvement was immediate. Another patient showed very little improvement, and three months after the operation died of a heart attack. No autopsy was obtained but the family physician thought the death was not due to a cerebral lesion.

All of the cases presented here were admitted to the Neuropsychiatric Service of the Medical College of Virginia Hospital. Ten of the patients were between the ages of sixty-one and seventy-seven; one was fifty, and another twenty. Three of these patients had had electro-shock previously with little benefit and three of them had evidence of marked arteriosclerotic changes. One of the first cases done in this series had a unilateral lobotomy and showed no improvement until the other frontal lobe was cut a year later, following which there was an immediate marked change in her behavior. Prognosis of the mental condition in each case seemed hopeless and all of them had been mentally ill for a considerable period.

Psychological and electro-encephalographic studies could not be done pre-operatively in most of the cases because of the patient's uncooperative and disturbed condition. Such studies are being done post-operatively, but reports to date show no significant findings.

A brief summary of each case follows:

Case 1.—A sixty-one year old female with a history of seclusiveness, worry and concern over trivial matters and frequent crying spells for six months, prior to the operation was apprehensive, anxious and suspicious, paced the floor continually, wringing her hands, weeping constantly and begging that she not be killed. She had previously had thirteen electro-shock treatments. Following each treatment there had been relief from the agitation and depression for a few hours and then the symptoms had returned. Fifteen days post-operatively she was alert, smiling and stated that she was able to relax for the first time in many years. There was no disorientation and no incontinence of urine following the operation. She was discharged on the nineteenth post-operative day and according to reports, she continues to make an excellent adjustment at home.

Diagnosis: Involutional melancholia.

Case 2.—A sixty-three year old female with a history of onset of depression two years prior to admission to hospital, with weight loss, insomnia and ideas of hopelessness, was markedly agitated, depressed, paced the floor constantly and expressed many somatic delusions. Physical examination showed a blood pressure of 240/110 and some ankle edema. Electro-shock treatments were ineffective. Because of her physical condition lobotomy was done in two stages. At the first operation, a left-sided prefrontal lobotomy was performed. There was little change in patient's condition following this operation. There was no disorientation, no incontinence, and only slight improvement in agitation and depression. Two weeks later a right-sided lobotomy was done. Immediately following this there was disappearance of the somatic delusions, agitation and depression. She became cheerful, cooperative, joking and facetious. This condition persisted at the time of her discharge, two weeks after operation. Reports from her relatives since discharge are that she is adjusting well at home.

Diagnosis: Involutional melancholia.

Case 3.—Approximately two years after menopause this fifty-one year old female became depressed and agitated. The melancholia lasted for eleven months and was followed by two months of marked agitation and pressure of speech, without much depression. She then again became depressed and expressed somatic delusions. A left prefrontal lobotomy was done with little improvement in symptoms. A year later she was admitted to the hos-

pital depressed, agitated and delusional. At this time a prefrontal lobotomy was done on the right and immediately following the operation she became cheerful and quiet. On the tenth post-operative day, she developed a transitory fecal incontinence. She showed no post-operative disorientation but was dull and restless and emotional blunting persisted. She was discharged on the eighteenth post-operative day and there has been no recurrence of symptoms of depression and agitation.

Diagnosis: Involutional melancholia.

Case 4.—This patient was a seventy-six year old female with a history of severe agitation and depression of six months' duration. On admission she was markedly agitated, tense, confused, moaning, and groaning and repeating ideas of self-depreciation and hopelessness. She repeatedly expressed a desire to die but there was no history of overt suicide attempts. There was no evidence of marked mental deterioration.

Physical examination showed an obese, senile female with moderate cardiac hypertrophy. Following prefrontal lobotomy her convalescence was uneventful; there was slight urinary incontinence for a few days. During the first post-operative week she was quiet, unconcerned but thoroughly cooperative and accessible. Now, several months post-operatively, her relatives report she is making an excellent adjustment without any symptoms of depression.

Diagnosis: Agitated depression.

Case 5.—This sixty-two year old female had a history of depression, suspiciousness and paranoid ideas of three years' duration. On admission to the hospital she was depressed and agitated. She expressed ideas of self-condemnation and had violent temper tantrums with much yelling and shouting. Physical examination was essentially negative. Due to a large lateral ventricle, extending far anteriorly, the lobotomy was not very extensive. Following the operation her suspiciousness and paranoid ideas diminished but for about ten days she remained rather irritable and retained some of her paranoid ideas. Following this, irritability disappeared and she ceased to show any emotional disturbance as a result of her mental trend. She was discharged thirty-two days after operation and has been making an excellent adjustment at home for over a year.

Diagnosis: Agitated depression.

Case 6.—This seventy-three year old female entered the hospital with a history of agitated depression of ten weeks' duration. She was apprehensive and suspicious. She showed echolalia, thought blocking and definite mental deterioration. At times she was disoriented, disturbed and inaccessible. There was generalized arteriosclerosis with moderate arterial hypertension and some retinal sclerosis. She had a cystitis, believed secondary to a third degree prolapse of the uterus. Following the operation, the agitation disappeared but she remained somewhat suspicious and there was no evidence of any increase in amount of mental deterioration. She was discharged thirty-three days after operation and is reported to have had no recurrence of her former abnormal behavior.

Diagnosis: Senile psychosis, depressed and agitated type.

Case 7.—This seventy-one year old female had a history of depression, seclusiveness and suspiciousness for four years. She was also reported to have stolen and hidden small objects about the home. In recent weeks she had expressed many paranoid ideas and had had various auditory hallucinations. Occasionally she would run wildly about the house. For a year she had shown marked loss of memory and recently she had been completely disoriented as to time, place and person, and was untidy in personal habits. On admission her speech was incoherent, she was disturbed, delusional, hallucinated, combative and untidy. Physical examination was negative except for generalized arteriosclerosis and moderate arterial hypertension. Following the operation she was incontinent on several occasions, was disoriented and confusion continued. She was easier to handle and was no longer disturbed and untidy, was less agitated and less depressed. She was discharged the nineteenth post-operative day. Since that time the patient has been making an excellent home adjustment, is no longer seclusive, and does not express her former paranoid ideas.

Diagnosis: Agitated depression.

Case 8.—In this case of a sixty-nine year old female there was a history of agitated depression with anorexia, insomnia and negativism for fifteen months prior to operation. On admission she was negativistic, noisy and appeared to be reacting to auditory hallucinations. Physical examination was

negative except for emaciation and dehydration. She had had six electro-shock treatments with some improvement resulting. However, when electro-shock was discontinued the symptoms reappeared. Immediately following the operation she was cheerful, alert and much less agitated. Improvement became marked on the second post-operative day. Incontinence was present for five days, then disappeared. She was discharged seventeen days after operation. At time of discharge she was cheerful, alert, well oriented and showed no evidence of recurrence of symptoms. She is now making an excellent adjustment at home, is bright, cheerful and unconcerned.

Diagnosis: Agitated depression.

Case 9.—This sixty-two year old female gave a history of hypochondriasis for many years and recent mental depression, agitation and somatic delusions. She had been a bed patient most of the time for four years and had been hospitalized several times because of "nervousness". She was in this hospital two months prior to operation and during this time there was no change in her behavior or mental content. A bilateral prefrontal lobotomy was done on September 26, 1941. The extent of the operation was limited because of enlarged lateral ventricles. Immediate improvement was very slight. Recent reports, now over two years since the operation, indicate that her symptoms gradually disappeared and that she is making an excellent adjustment and has no complaints.

Diagnosis: Agitated depression.

Case 10.—In this case of a sixty-eight year old female there was a history of depression of two years' duration and two previous hospital admissions. She had received metrazol and insulin therapy, neither of which resulted in any improvement. On admission to this hospital she was agitated, depressed and constantly expressed ideas of self-condemnation and self-depreciation. She begged to be killed. She had been eating very little and had had many tube feedings. Physical examination showed marked emaciation, a rectal fistula and severe contractions of the hamstring tendons. On the thirty-first day after admission a prefrontal lobotomy was performed. The post-operative period was not remarkable; she was incontinent on three occasions, and there was no change in her mental content. She developed a mild bronchitis and remained in

the hospital forty-days after operation. After her discharge there was no change in her mental content and she died several months later. Her attending physician reported that her death was not due to a cerebral lesion.

Diagnosis: Agitated depression.

Case 11.—In this case of a seventy-seven year old male there was a history of depression and paranoid delusions of four months' duration. On admission he was disoriented, confused, noisy, uncooperative, combative, assaultive and delusional. During his stay in this hospital before the operation the above symptoms continued. He had occasional short periods when he was more cooperative, but he was consistently delusional. Forced feeding and parenteral fluids were often necessary. Electro-shock therapy was considered contraindicated because of coronary sclerosis and left bundle branch block. He was not considered a good operative risk but in view of the minimal amount of shock usually occurring, operation was advised. Following the operation immediate improvement was noted. He became fully cooperative, ate and slept well and showed none of his previous disturbed behavior. His delusions persisted but he appeared to ignore them. He showed urinary incontinence the first two days after operation. According to his daughter, he appeared to have regained his prepsychotic level. His improvement was so rapid that he was discharged from the hospital after ten post-operative days. Now, more than a month since his discharge from the hospital, it has been reported that he is showing some anxiety and apprehension about his delusions.

Diagnosis: Agitated depression.

Case 12.—A twenty year old male, the only case of schizophrenia in the series, gave a history of definite schizophrenic behavior and content for the past five years. On admission he was confused, delusional and showed marked disharmony of affect. Physical examination was negative. During his course in the hospital he showed periods when he was acutely disturbed, excited and uncooperative. At other times, when he was not disturbed, he was preoccupied, asocial and seclusive. A series of seven electro-shock treatments resulted in no definite improvement. On the day following the bilateral prefrontal lobotomy he appeared cheerful, was entirely cooperative and no longer expressed his former delusions. He showed transitory incontinence and

some disorientation. These disappeared and he became interested in ward activities. He became entirely cooperative, was free from confusion and excitement and all abnormal mental content disappeared. Fourteen days following the operation he was discharged and now, several months post-operatively, is reported to be making a satisfactory home adjustment.

Diagnosis: Dementia praecox.

SUMMARY

A preliminary report of the results obtained following prefrontal lobotomy in twelve cases of apparent chronic intractable mental illness is given. Of the twelve, one was very little if at all improved; all others showed definite improvement. Eight of the cases were diagnosed agitated depression, three involuntional melancholia, and one dementia praecox. The duration of illness prior to the operations ranged from six months to four years and the age of the patients ranged from twenty to seventy-seven years. The length of post-operative hospitalization varied from two weeks to sixty days with an average of thirty days. The two patients who were kept in the hospital for sixty days after operation had other conditions not associated with the mental illness or the operation, which necessitated their hospitalization. The amount of disorientation following the operation varied considerably in this series but lasted only a few days in all cases in which it occurred. The most constant finding was that of the loss of self-concern, anxiety and apprehension. This relief of distress was accompanied by a change in behavior with the result that the patients became capable of living and adjusting in their home environment, which was in sharp contrast to their pre-operative behavior, which had made extramural adjustment impossible.

An interesting observation in two patients in this series is that one was unimproved following a unilateral lobotomy but showed a remission of symptoms following a lobotomy on the other side one year later. Another showed no improvement following unilateral lobotomy, with cessation of symptoms when lobotomy on the other side was performed two weeks later. These two cases suggest that a bilateral lobotomy is necessary if improvement is to be expected.

CONCLUSIONS

1. Many hopeless, chronically mentally ill indi-

viduals who appear to be destined for an institutional existence the rest of their lives, as a result of this procedure make a social recovery and most of them are able to live in peace and quietude in their own homes. Many of them who still have abnormal content of thought are not disturbed by it.

2. Moderately severe generalized and retinal arteriosclerosis do not appear to be contraindications to lobotomy.

3. Disorientation or incontinence when present following the operation are not permanent.

4. Improvement following prefrontal lobotomy in most cases is immediate but may occasionally be delayed, and in either instance is usually permanent.

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THE MATERNAL MORTALITY SITUATION*

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It is gratifying to note that the maternal mortality rate is decreasing throughout the whole country and now is somewhat less than half that of 1930. The records of Virginia for 1930 showed 7.2 deaths per 1,000 live births. The 1942 rate was 3.3. The percentage for the United States has been slightly better except 1933 when it was the same, 6.2. The reason for Virginia's deficiency may be accounted for by the fact that some states have a smaller percentage of negroes and other types which give a higher mortality rate. Perhaps there may be other causes which should be sought for and corrected if possible. Fortunately, organized medicine, including the machinery of public health, no longer assumes the role of self-congratulation. The progress so far made was not accomplished that way. The plan of searching for the cause of failures and making diligent effort to correct them is generally regarded as the proper attitude. This idea is not confined to obstetrical management, but is followed by all branches of medicine. Every reputable hospital makes a critical study of its records at regular intervals.

Following this plan the Medical Society of Virginia appointed a Maternal Health Committee of seven members who undertook to study the records of every maternal death which occurred in the State of Virginia. The Committee has worked in close harmony with the Obstetric Division of the State Health Department, which has collected the data and given the closest cooperation. Maternal Health Centers and Prenatal Clinics have been established throughout the State. These are under the direct management of the State Health Department and are doing untold good by furnishing prenatal and obstetrical care. It also provides centers of information and education, which may eventually do much to break down the obstacles of ignorance which has contributed so much to disaster. So far, the Committee has reviewed 475 cases. Approximately one-half or two hundred and twenty-nine (229) of these were classified as preventable. Two-thirds, or three hundred and eleven (311) cases had

no prenatal care. This is not of great interest to us now as its role in maternity mortality is well known. However, it does remind us that remedies for this deficiency must be continually sought if suitable progress is to continue. The 229 preventable deaths are a constant challenge to better obstetrical practice. Many of these lost their lives on account of ignorance and neglect on the part of the patient or the family. The treatment recorded in 165 cases, one-third of the cases studied, was considered by the Committee to be incorrect as related to the procedures and methods generally accepted and found to give more satisfactory results. I repeat, approximately one-half of the 475 deaths were preventable, and one-third had incorrect treatment. All of these would not necessarily have lived if they had been given the most approved treatment, but many would, and it is the treatment of these which should be brought into the limelight in order that mistakes may be recognized and the same mistakes not be repeated indefinitely. Some of these, perhaps many, were due to errors in judgment, or, in other words, the hindsight was better than the foresight. These can never be entirely eliminated, but if the particular error is recognized it is not likely to be repeated. One group, and this forms the larger number, seems to be due to the neglect of methods which have been widely adopted and generally found to give better results.

TOXEMIA

Toxemia with one hundred and twelve (112) deaths heads the list. Forty-three (43) of these are considered to have received incorrect treatment. It would be interesting to have tabulated the various procedures which were regarded as incorrect. Possibly sometime someone may undertake this, but at present I can only rely on general impressions obtained from the study of these records. The greater number either had no prenatal care or deficient care. The patient and family have often contributed to this. Available methods for controlling convulsions were not used. Attempts to induce labor were instituted before controlling the eclampsia. The use of general anesthesia for delivery in toxic patients is common.

*Read before the Seaboard Medical Association of Virginia and North Carolina, at Richmond, November 30-December 2, 1943.

Eclampsia Case Report.—This colored 26 year old patient was given prenatal care beginning January 24, 1942. There was nothing abnormal shown on weekly visits during this time until May 24, 1942, when she complained of severe headaches which were relieved by some self-medication. During two days following that time she felt well. About 9 A. M. on the third day she was found in bed by a member of her family and she was having a convulsion. She was given morphine gr. $\frac{1}{8}$, two doses, and some ether to control the convulsion. She was sent to the hospital two hours later. She was admitted about 11 A. M., having a convulsion. In the hospital she was given 20 cc. 10% solution of $MgSO_4$ in the vein and sodium amytal by rectum, amount not stated. One hour later the patient was quiet and apparently doing well. At this time a Voorhees' bag was inserted. One hour later the pulse was barely perceptible and there were several convulsive twitches. Death followed a short period of respiratory distress four hours after admission. She was not delivered.

This case illustrates the disadvantage of making any attempt to induce labor until the patient has sufficiently recovered from her eclampsia. Apparently, the convulsions were being controlled and if suitable treatment, possibly extending over a period of days, had been carried out it is not unlikely that she would have had a successful recovery. Inhalation of ether possibly contributed to this result.

SEPSIS

Sepsis accounts for 81 cases; 29 of these were classified as having received incorrect treatment. Sepsis is often the fatal factor in other complications, as toxemia hemorrhage and untimely attempts to induce labor.

Case X represents a very common sequence: Patient, white, aged 38, gravida 1, obese, arthritic, and hypertensive, $8\frac{1}{2}$ months pregnant. Induction of labor was attempted by castor oil and pituitrin; membranes ruptured artificially after 24 hours of inactive labor. No observation recorded as to condition of cervix or evidence as to possible disproportion. A classical section under general anesthesia was done on the second day because of failure to progress. Sepsis and death followed promptly. It is suggested that treatment of the toxemia first would have been better. A study of the pelvis and head as to position or possible disproportion would have then been in order. Condition of the cervix would

also have given valuable information. If delivery was thought to be indicated and the condition appeared unsuitable for vaginal delivery, an elective section under local or caudal anesthesia, without interference from the vaginal tract, would have offered better prospects. If it had been necessary to do a section late, either a low cervical or extra-peritoneal section under local anesthesia would have offered a considerable degree of safety.

Puerperal Sepsis Following Midwife Delivery.—This case represents the midwife problem. It was a colored primipara, age 17. No prenatal care. The midwife said it was a spontaneous delivery after a four hour labor. Patient did well until about one week postpartum, when she complained of pain in the side and then in the stomach. Chills and fever began after this time. The abdomen became distended after the onset of chills and fever. The physician who was called stated that this patient was seen the first time about two weeks postpartum. She had been having chills at the time of the visit. She had a high temperature, and the abdomen was distended. The patient was sent to a hospital. She had an umbilical hernia that ruptured sometime later and pus was discharged from it. She finally developed pneumonia and died 14 days after admission. These records show a considerable number of women who have been delivered and treated by midwives and have died from sepsis although the labor was supposed to be very normal.

Many of these sepsis cases followed normal deliveries conducted by midwives.

PLACENTA PREVIA

Placenta previa was the diagnosis in 27 cases; 22 were incorrectly treated. The common error here was, first of all, not taking the first painless hemorrhage seriously. When the repeated bleeding did demand attention a pelvic examination was made without preparation for delivery and without first arranging for blood transfusion. Every patient bleeding in the latter months of pregnancy should be hospitalized after the first bleeding and without pelvic examination, either before or after admission, unless preparation has been made for immediate blood transfusion and suitable treatment. X-ray examination has been found to be very helpful in locating the placenta, but is not essential.

Placenta Previa and Possibly Ruptured Uterus.—This was a white patient, age 35, 2 other children,

and about $8\frac{1}{2}$ months pregnant. This patient had an attack of bleeding, the first time in December, 1941, about the fifth month of pregnancy. She was hospitalized at this time and the bleeding stopped. She remained in bed at home for a period of $2\frac{1}{2}$ months, before the time of delivery. She was admitted to a hospital April 17, 1942, on account of vaginal bleeding. She was not in labor. The diagnosis of marginal placenta previa was made on a vaginal examination. The cervix was about $\frac{1}{2}$ dilated. A Braxton Hicks version was done after 18 hours stay in the hospital. The bleeding continued after the delivery was completed with forceps on the after-coming head. The vagina was packed. The patient was transfused before delivery and plasma after delivery. The bleeding could not be controlled. Ergotrate, pituitrin, and glucose were given. The patient died about two hours postpartum.

Version and extraction through a partly dilated cervix is always dangerous, and is an invitation to death. If the patient was not bleeding at the time, it is difficult to know why this method was adopted. A simple rupture of the membranes, certainly in a multipara, would probably have been all that was needed. Of course, an early Cesarean section would have offered also a safer method of handling it.

PREMATURE SEPARATION OF PLACENTA

Premature separation of placenta was the diagnosis given in 14 cases, and 6 of these cases, or about 43%, received incorrect treatment. Premature separation is not so common as other types of hemorrhage, but the mortality is relatively high. Toxemia is often a part of this. There is considerable difference of opinion as to the best methods of treating premature separation. Some use and recommend so-called conservative methods, as rupture of membranes, tight binder, etc. All will agree on this in some cases. There are others who are likely to advocate section more frequently, while some others think section is never indicated. All will agree that blood transfusion should be provided if possible before any treatment is undertaken. It is my impression that this has been the principal complaint of the treatment. The diagnosis has not been made so promptly since external bleeding is not always present.

POSTPARTUM HEMORRHAGE

Postpartum hemorrhage was the diagnosis given

in 51 cases, and 22 of these cases received incorrect treatment. Fatalities followed many normal labors in homes. In a number the doctor left the home too early. The use of anesthesia in the third stage of labor and while repairing the perineum is a contributing factor in some cases.

All of these deaths cannot be charged to the individual doctor. The cause goes back to the teaching of obstetrics during the last three-quarters of a century. Every textbook published until recently advises the student to treat the third stage in a manner which is in my opinion exactly wrong. They direct the student to push down the fundus to expel the placenta and control hemorrhage. Nothing is more conducive to hemorrhage. In most schools this is still taught although there are signs of improvement. One recent article by the chairman of a State Maternal Welfare Committee complains that hemorrhage now leads all causes of death in his state, and that 60% are due to postpartum hemorrhage. As a remedy for this he advises the obstetrician to "push down" on the fundus until all clots are expelled; then while holding down on the fundus with one hand, hold the other hand tightly against the vulva pad.

Dr. R. L. Dickinson, in 1899, 44 years ago, published a well illustrated paper in which he demonstrated the fallacy of this, and it is still true today. His plan was to make pressure on the lower uterine segment, elevating the fundus in the abdomen. Its value can be demonstrated by anyone who wishes to try it.

Dickinson used this procedure to control hemorrhage, although, I do not know that he used the plan to express the placenta. His paper did not mention this.

The writer described a method of treating the third stage of labor in a paper read before the South Atlantic Association of Obstetricians and Gynecologists in February, 1940. This method was illustrated by excellent drawings made by my associate, Dr. R. B. Nicholls. I had been using this plan for years. During the preparation of that paper I read the article by Brandt, which was so similar that I called it the Brandt method to avoid confusion. The method briefly is this:

The palmar surfaces of the fingers of the left hand are placed on the uterus at the junction of the lower third and the upper two-thirds of the uterus. The cord with a hemostat attached is held by the

right hand. Gentle upward pressure is made on the uterus. If the placenta is separated, as it usually is in three to five minutes, the placenta can be felt to slip under the fingers; then, turning the hand with the palmar surface down, pressure is made on the placenta, not on fundus, and guiding it by the cord it is expelled. If there is any disposition to bleed the hand is placed again on the cervico-uterine junction, as previously described, making gentle pressure and raising the fundus in the abdomen after the method of Dickinson. At this time ergotrate is usually given in the vein or pituitrin in the muscle. If there is disposition to bleed, an assistant may place his hand at the point described and hold it while the perineum is being repaired. If local anesthetic is used in the perineum no anesthesia is needed. This greatly facilitates contraction of the uterus.

After the publication of my paper, Dr. DeLee, in a personal communication, stated that he thought the principle described was correct and that he proposed to adopt it. The eighth edition of *Principles and Practice of Obstetrics*, DeLee-Greenhill, partly re-written by Greenhill and recently published, adopts this principle on the whole, and denounces the Crede method of expression, but, unfortunately, uses one illustration which describes the piston pressure method of expression of the placenta, which I believe to be conducive to hemorrhage. Since hemorrhage looms large as a cause of maternal deaths, further and more wide-spread study of the third stage of labor seems suitable.

It is amazing that after the publication of Brandt's paper which offered so much help for a recognized need, so little attention was paid to it. I can find only one reference to it in medical literature, which appeared during the seven years intervening before my paper was published. The reference referred to is a casual mention of the Brandt maneuver in a paper by Pastore on hemorrhage. This only illustrates the slow progress we make.

ABORTION

Abortion contributed 64 deaths; 10 of these were incorrectly treated. Probably the majority of these abortions were criminally induced. It is evident that the common practice of curetting, particularly if fever is already present, has given bad results.

RUPTURED UTERUS

Ruptured uterus was the diagnosis in 15 cases;

9 cases received incorrect treatment. Some of these followed previous classical section and some were associated with a number of unfortunate moves. Version with partly dilated cervix is responsible for several of these deaths. Pituitrin, $\frac{1}{2}$ cc. doses, in the first stage of labor was recorded in a number of these cases. Case XII records this error.

Case XII—Ruptured Uterus.—This patient was a colored gravida 5, age 36. It was stated that she had been attended during her prenatal period and showed nothing abnormal. At the time of a previous pregnancy she had bled profusely when an abortion occurred at three months. The presentation at the present pregnancy had been transverse and was converted to a vertex three weeks before the time for delivery. The patient was in labor and a physician was called. Pains were mediocre. She was given two doses of pituitrin $\frac{1}{2}$ cc. each. The pituitrin was given about midnight, and soon after that time pains were not severe and progress stopped. She was advised to go to the hospital when she began showing signs of shock. She died soon after admission. A postmortem section showed an organized clot in the fundus. The placenta was separated from the uterus. The uterus was ruptured on the left side above the cervix. The infant was free in the abdominal cavity. Although the patient was advised to go to the hospital when she showed signs of shock, it is noted that patient was unwilling to do this and wished to wait until morning which she did, and was in a moribund condition when she arrived there. Pituitrin is still furnishing a fair number of deaths and this case is selected as one which is rather characteristic, as there was certainly nothing in her history to suggest inducing labor for any reason.

Manual dilatation of the cervix is recorded in one case.

ECTOPIC PREGNANCY

Ectopic pregnancy was the diagnosis in six cases; four received incorrect treatment. My impression is that these errors were largely failure to make a diagnosis (certainly a pardonable error) and failure to act promptly and particularly to provide transfusion.

There are several other conditions which furnished an occasional death.

There were six cases which died of prolonged labor and exhaustion. These have been mostly associated with failure of prenatal care, particularly study of the prenatal position and disproportion. It

also calls attention to the fact that a patient cannot remain indefinitely in labor without serious damage. The X-ray cannot always decide the question, but a trained radiologist can give information which is life saving; particularly is this true in the narrow pelvis which can be suspected but not accurately diagnosed without X-ray pelvimetry. All breech cases in primiparae should have X-ray measurement of pelvis and head of foetus. All cases which show no disposition to engage and to over-ride in the week or two before delivery should have X-ray pelvimetry. Almost everyone is within reach of this. Under the present plan I have no doubt that the State will provide this service for anyone if it is not otherwise available. However, the ordinary methods of pelvimetry and observation available to all will furnish information which, if carefully interpreted, will provide a greater degree of safety than these patients have experienced.

During 1942, 65,004 births occurred in Virginia. Two hundred and twelve (212) of these women died. According to our present information only about 107 of these were preventable and about 70 were subject to treatment which would be considered incorrect.

I have attempted to point out some of the means by which we may eliminate this group of 70 deaths in one year. To do this we will have to continue to criticize ourselves and make use of methods generally

found to give better results. It is encouraging to note that 64,790 have been safely delivered during the last year. This must have included a vast amount of good obstetrics. In 1930 the rate was 7.2, which would have resulted in 468 deaths in 1942 if no improvement had taken place, or 254 lives were saved during 1942 in Virginia alone by the improvement in obstetric practice. What the future has in store must depend to some degree upon the fate of the medical profession itself. If the plans of the Wagner-Murray-Dingell Bill are enforced and the medical profession subjugated, progress may recede as it has in totalitarian countries.

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Medical Education.

Dr. William Henry Welch, in an address at the graduating exercises of Johns Hopkins University Medical School, June 13, 1933, made the following statement:

"But medical education is not completed at the medical school; it is only begun. Hence it is not only or chiefly the quantity of knowledge which the student takes with him from the school which will help him in his future work; it is also the quality of mind, the methods of work, the disciplined habit of correct reasoning, the way of looking at medical problems.

"In order to cultivate in the student this habit of thought, this method of work, I believe that there is no one thing so essential as that the teacher should

be also an investigator and should be capable of imparting something of the spirit of investigation to the student. The medical school should be a place where medicine is not only taught but also studied. It should do its part to advance medical science and art by encouraging original work, and by selecting as its teachers those who have the training and capacity for such work. In no other department of natural science are to be found problems awaiting solution more attractive, more significant than those in medicine; and certainly these problems do not lose in dignity because they relate to the physical well-being of mankind." (Chesney, Alan M., The Johns Hopkins Hospital and the Johns Hopkins University School of Medicine. Baltimore, Md. Johns Hopkins University Press. 1943. 1: 235-236.)

NUTRITIONAL ACTIVITIES OF THE VIRGINIA STATE DEPARTMENT OF HEALTH*

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For many years, those engaged in public health activities have been aware of the effects of poor nutrition. While much has been known about the more definite deficiency diseases, there has been, until recent years, insufficient authoritative information relative to the occurrence of the less dramatic subclinical types.

Now dietary deficiencies present a challenging public health problem. A realization of the important part nutrition plays in the prevention of disease and in the advancement of health has resulted in an acceptance by public health officials of the need of special nutritional efforts in the general health program. War efforts have served to emphasize the wisdom of this attitude.

In accepting the challenge, the Virginia State Department of Health realized that the problem of educating the public to purchase and eat what was good for it involved tremendous barriers. Not only personal habits and economics, but false or at least half-false conceptions of food values, as well as fads, all play a part in this difficult situation. Through radio, through advertisements, and by means of printed presentations, a fair proportion of the public has developed warped ideas on the subject of food, which will demand much persuasive effort to uproot.

For example, the State Health Department is aware of the present buying wave of concentrated vitamins. Undoubtedly, the importance to health of vitamins in this form has been fantastically exaggerated by some of the manufacturers of these products. Hundreds of thousands of men and women, influenced by high-powered advertising, are self-prescribing these magical bullets of energy to the tune of approximately \$100,000,000 annually. These well intentioned, though misguided individuals, ignore the significant fact that, if enjoying rea-

sonably good health, the grocery store and not the drug counter is the place to find vitamins and, moreover, if ill, that the physician only is the one to judge whether or not vitamin concentrates are indicated.

To neutralize this and other misleading information on food, calls for effective counterattacks. State and local health departments, through the usual publicity channels, are attempting to do what they can in this direction, aided by the practicing physician, large insurance companies, and the baking, canning, meat and dairy products industries.

The Virginia State Department of Health, in its realization of the public health significance of nutrition and malnutrition, has assumed a cooperative approach to the problem. It realizes that any nutrition effort for the entire population requires the broadest possible sanction. All major related organizations share in supplying this approval. Consequently, in developing a division of nutrition, the Department recognized that the activities of such an administrative set-up must be related carefully and completely to existing community groups. The Department, also, appreciates the publicity activities of the American food producers whose hundreds of thousands of dollars are buying entire pages of national magazines and on them are placing basic nutritional facts. Undoubtedly, this influence tends to mold the public's nutritional judgment and to impel it, to some degree at least, to revalue its previous notions on this vital subject.

The nutritional activities for which the Virginia State Department of Health has assumed responsibility are essentially educational. This work was inaugurated two years ago, with the employment of a nutrition consultant. Two nutritionists have been added since that time.

At the beginning, a three day nutrition institute was conducted for the Department's advisory and field staff, at which time, a review of dietary essentials was given, followed by discussion of the prob-

*Read at the meeting of the Richmond Academy of Medicine, February 22, 1944.

lems involved in the proposed program.

Similar institutes were held for each district in the State. These were attended by the personnel from surrounding health departments. The conferences aimed to develop local nutrition activities as an integral part of the general public health work, as well as to focus attention on current nutritional information.

Although there is much planning before the nutrition service actually reaches a county, the burden of the program rests with local health department members. The Department's experience indicates that efficiency is promoted and time saved by having the routine nutritional efforts handled by public health nurses, reserving the nutritionist's time for advisory and specialized service. Of course, it is upon the county health officer that the actual execution of the program depends. Moreover, it is through the health officer that the nutritionist gains entree into the various county organizations and activities.

Each locality has its own individual problems. For example, a program, which fits a county with a scattered population in a mountainous area, obviously will differ from that of another centered around a large industrial city.

In some counties, the health officer may feel that the school lunch program is the best approach to the county's nutrition needs. In another, prenatal clinics may seem to be the best medium. But, as previously intimated, in all jurisdictions the nurses represent the most important public health channel through which information on nutrition can be disseminated. By them, group instruction in nutrition is being carried on in the prenatal and well baby clinics held in rural areas. This type of instruction has proved valuable not only to patients, but, also, to midwives and lay persons attending the clinics. Thus a desirable effect throughout the community has been achieved. Demonstration material and outlines for instruction are prepared by the State Department of Health.

The cooperation of Home Demonstration and County Agricultural Agents has been most helpful in developing local nutrition programs. When requested, help has been given in the formation of committees of these organizations. Also, upon request, refresher courses of home economics teachers, emphasizing the public health approach, have been conducted.

Concentration of large groups of workers in wartime industries has offered opportunities to improve nutrition. To meet this need, the State Health Department has developed an industrial nutrition program.

With the active cooperation of management and particularly of plant medical departments, many establishments have given our Department an opportunity to promote nutritional education for the employees; through this channel it has been possible to reach many of their families. Exhibits and posters emphasizing the importance of the right food are used often in the cafeteria or other appropriate places. If the plant publishes a weekly newspaper, articles on nutrition are prepared and formulated by the Department. These items frequently are released under the plant physician's name or may be run as straight news.

A series of simple, attractive leaflets and posters, each designed to stress a single fact about good nutrition has been prepared for use in the industrial program. The series covers several months and includes a pertinent bulletin on the packed lunch—one for men and one for women.

At present, about 150,000 workers are being reached regularly by this service. This material is offered free to industry. Each worker receives a new leaflet every two weeks and a new poster goes up on the plant bulletin board once a month. All participating plants are visited by the industrial nutritionist and the importance of proper diets for the worker is discussed with the plant officials.

Eating facilities are checked as to adequacy and type of lunch chosen by the worker. This is done by keeping a record of each worker's cafeteria tray. The contents are checked and later graded as good, fair or poor, according to standards previously established. The result of this survey then is published in the plant newspaper. The educational advantage of this approach is natural and believed to be effective.

These efforts are reflected in many plants by a marked improvement in eating facilities. In numerous instances, management has developed a detailed educational program.

Public utilities, also, have been most cooperative. Through their inspiration and guidance comprehensive nutritional conferences in industrial communities for the wives of plant workers have been conducted.

At the request of local health departments and with the active assistance of State and local departments of education, intensive nutrition educational programs have been carried on in the schools of selected counties.

Surveys have been made of the adequacy of the diets of school children in these counties. This information is used to interest the students, teachers and parents in the importance of improving the nutritional status of the children as well as a basis for instruction in the individual classroom. Elementary supervisors have worked closely with the Department's nutritionists in promoting this work.

The nutrition education program in the schools includes the day by day environment and instruction; the school lunch, home-school cooperation, adult education and school-community team work. The content and methods of instruction vary with age and the demand for details of knowledge on the subject. Teaching materials and suggestions for posters and exhibits have been furnished, illustrative materials distributed, and moving pictures shown. Talks have been made to the children and adult groups, particularly parent-teacher associations.

A number of local school lunchroom committees have requested the Department's advisory services in connection with special problems arising in the operation of school lunchrooms. Since it is not what is on the menu of the school lunch, but what is "in the child" that counts, correlation of teaching with experience in the school lunchroom is recognized as an educational opportunity.

Incidentally, special emphasis is placed on the development of the child care program of the Office of Civilian Defense. The health supervision of the children of mothers now being employed in industry presents numerous opportunities to contribute to the war effort as well as to the health of future citizens. Advisory service in nutrition, to the recently organized local child-care centers, is considered by our Department to be one of the more important immediate necessary health protective measures. A nutritionist visits these centers and renders such advisory service as may be indicated. Materials needed for this activity and forms to record the procedures involved in supervising the health activities of the children have been prepared and made available to the personnel of nursery schools.

Plans are being made in a selected area to include nutritional services in the preschool clinics that are held each spring in the public schools. This will be in the nature of a demonstration to show what can be accomplished by adding this service to the preschool clinic. A nutritionist will confer with the parents of each child attending the clinics in the chosen locality. Specific nutritional deficiencies will be noted. Parents of these children will be given help through home visits and other individual work.

Again, the State Department of Health gives assistance, when requested, to the dietary departments of smaller hospitals, which lack the services of a trained dietitian. Hospital outlines have been prepared giving information on necessary routine procedures and other pertinent facts, which have been found most often to be requested. Along with other results of this activity, the personnel of these smaller hospitals have been encouraged to give more individual instruction in the normal diet.

Although, the cases of pellagra in the State of Virginia may not seem to be as high as in most of the other Southern States, it is believed there are many cases which are not recognized as such, perhaps due to the fact that many people suffering from sub-clinical deficiencies never go to a doctor. Consequently, the Department recognizes the part it should play in bringing this problem to the attention of the general public, as well as to the professional groups. When this disease is reported to the Department, it is subsequently followed up by one of its nutritionists.

In conclusion, the State Department of Health is under no delusion regarding the size of the problem and the difficulty involved in its nutritional efforts. The intelligent, energetic and efficient activities of federal, State and local agencies and of the food industry, to raise lay judgment in nutrition to a satisfactory performance level, is readily admitted to be a tremendous task. Ignorance, prejudice, habits, misinformation, half-truths and just plain human stubbornness combined, represent a virtual Goliath. However, in view of the progress that can be reported truthfully, as a result of the cooperative efforts of those legitimately in the nutrition field, the Department constantly keeps before it the fact that David *did* slay Goliath—and takes heart from the memorable feat.

NUTRITION FROM THE DOCTOR'S POINT OF VIEW*

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1. *Nutrition, A Universal Problem.*—The problem of nutrition concerns more people than any other phase of our war effort. Our nation is now faced with a task for applied medical science which is as great as the development of sanitation or the control of communicable disease. Such a broad statement is justified because nutrition is a universal problem, affecting, as it does, all of the people all of the time. It involves not merely an attempt to avoid malnutrition. It is much bigger than that. We must be concerned with continued exploration of the possibilities for the application of present and future knowledge toward the attainment of optimum health. In the field of applied nutrition, we are not so much concerned with avoiding something as we are with gaining an objective. In 1941, Sir John Orr, in a review article on Nutrition and Human Welfare, said: "The new science of nutrition does more than show the way to better health and improved physique. It affords a solution to some of our most difficult social and economic problems. If its exponents speak with the authority warranted by the knowledge which they have acquired in recent years and use all their influence to get this knowledge applied, a review article on Nutrition and Human Welfare *ten years hence* may be a record of an unprecedented advance in human welfare."

In the everyday practice of medicine the degree of our responsibility for solving a problem is not necessarily in proportion to the magnitude of the problem; it is rather determined by the availability of methods for diagnosis and treatment. The nutrition problem is not only great in magnitude, but is one regarding which much knowledge is now available.

Excerpts from a recent bulletin of the National Research Council on "Inadequate Diets and Nutrition Deficiencies in the United States" are of particular interest to medical men.

"All the evidence is in agreement that deficiency states are common among the population of the

United States. Most of them are not the severe acute type. Rather, they are less intense in degree and very much slower in their course. Predominantly the deficiency states here are mild, moderate or severe chronic forms. Because of their slow gradual development, their presence is commonly unsuspected. In frequency and severity, they increase with age and with lowered economic level. As yet optimum nutrition throughout the nation has not been achieved; on the contrary, deficiency states are present on a large scale.

"Statistics on the prevalence of iron deficiency (hypochromic) anemia in the population of the United States are not nearly as complete as the figures available for the British Isles. All surveys show a notably high prevalence, especially in children and pregnant women of the lower income groups. . . .

"Now that reliable methods are available for the determination of ascorbic acid in the blood, reports of the prevalence of vitamin C undersaturation in population groups are appearing with increasing frequency."

If the signs of thiamin deficiency "in only half the subjects studied (in a recent survey) are eventually proven to be the result of a thiamin deficiency, the prevalence of neurologic changes on a thiamin deficiency basis is large enough in school children and in adult males under 40 years of age to cause genuine concern."

2. *Malnutrition—What Is It?*—What do we mean by malnutrition? When is a person malnourished? Is it only when he is actually starving, is it when he fails to reach an optimal nutritional state, or is it somewhere between these two extremes? Such a question is not entirely impractical since, as yet, we have no commonly accepted yardstick for measuring nutritional status. For this reason we hear widely divergent statements as to the prevalence of malnutrition among population groups.

If we use the starvation standard, we can say that we have little or no malnutrition in this country. If we are not satisfied with anything less than the best, and feel that anything below optimum

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nutrition is malnutrition, then we must admit that few of us could measure up to this standard. Undoubtedly, we will find that we have all levels of nutritional status represented in most population groups.

In the classical deficiency diseases, usually some one deficiency predominated to such an extent that the entire condition was attributed to that single deficiency; for example, pellagra, scurvy, rickets, etc. As our diagnostic methods improved, we began to obtain more satisfactory diagnoses. In some instances symptoms which were usually present with a recognized deficiency, and formerly had been attributed to that deficiency, were found to be due to concurrent shortages in other nutrients. For example, it was found that certain signs around the mouth which are often seen in pellagra patients are due, not to niacin deficiency, but rather to lack of riboflavin.

Malnutrition is not a single disease. Etiologically, it is more like a group of diseases superimposed one upon the other. Rarely, if ever, outside of research laboratories, do *single* deficiencies exist. Almost every case of malnutrition is a combination of deficiencies with one or more predominating. This is usually true even in the mildest forms of malnutrition where people are getting almost enough, but not quite enough, of several nutritional essentials. There are all degrees of deficiency which appear in an infinite number of combinations.

As one would expect, the manifestations of milder conditions are usually less pronounced and often less specific. Also, they are usually disturbances in function rather than gross organic or anatomical changes. Deficiency diseases, as a group, have been popularly referred to as *hidden hunger*. They are hidden in the sense that their manifestations often are not recognized as hunger signals.

3. *Where Does Malnutrition Begin?*—Unfortunately, we cannot say with finality that a certain percentage of the people in the United States are well-nourished and a certain percentage are malnourished. In any group studied, the malnutrition found by any one worker depends on his knowledge of it, the thoroughness with which he searches for it, and the yardstick by which he measures it. Requirements for specific nutrients vary from one group to another, from one individual to another, and even in a single individual under different conditions.

Then, too, malnutrition is a generic term applied to a group of diseases, not to a specific disease entity with a single causative agent. Also we recognize borderline states of inadequate nutrition which hardly warrant the term *disease* in the ordinary sense. Such states have been referred to as sub-clinical malnutrition.

The range between severe deficiency disease and optimum nutrition is wide and any divisions into levels must necessarily be arbitrary. We can no more draw a line and say "at this level malnutrition ends and good nutrition begins" than we can say "at this moment a patient ceases to be sick and becomes well." For practical purposes we might think of nutritional status in terms of *zones*, which merge or blend into each other as do the colors of the rainbow. For example:

1. The *danger zone*, including nutritional states varying from full-blown deficiency disease through different levels of poor nutrition, gradually blends into the subsistence zone.
2. In the *subsistence zone*, we find nutrition ranging from fair to moderately good and blending into the optimal zone.
3. In the *optimal zone*, the range is from good to best.

Certainly, morbidity and mortality tables have not reflected the magnitude of the nutrition problem in our national health economy. In fact, it seems likely that "dietary inadequacy" is so common in the United States as to be considered "normal" or average. Jolliffe, McLester, and Sherman concluded in a recent summary: "The evidence at our disposal warrants the conclusion that dietary inadequacies and malnutrition of varying degrees are of frequent occurrence in the United States and that the nutritional status of an appreciable part of the population can be distinctly improved. If optimal nutrition is sought, not mere adequacy, then widespread improvement is possible." To quote these authors further, "Some types of malnutrition are:

- "(1) Strikingly obvious to everyone,
- "(2) Some are apparent only to the physician who looks for them, and
- "(3) Some are evasive and elusive even to the careful observer using the most accurate specialized technics.

"If the first group alone is counted (those strikingly obvious to everyone), the prevalence of mal-

nutrition will be recorded as low, almost negligible. If the second group is counted (those apparent only to the physician), then the rate will be high. If the third group is counted (those evasive and elusive even to the careful observer), then the rate will be sufficiently high to cause genuine concern."

The fact that average longevity has increased should not give us a false sense of security. A large factor has been a great reduction in infant mortality. Also, while increased longevity may, in a very general way, be related to the health level of the population, we cannot accept it as a valid criterion for measuring health level. Paradoxically enough, with our birth rate decreasing (exclusive of the wartime stimulus) and our average age gradually becoming greater, our "average health level" may be actually decreasing. It is significant that the percentage rejections of selectees for military service increases markedly with the increasing age of those examined.

4. *Malnutrition Incognito*.—Malnutrition has been classified in various ways and to different degrees. Etiologically, malnutrition has been divided into two general types:

- (1) *Primary* (malnutrition) or malnutrition resulting from inadequate intake of dietary essentials.
- (2) *Conditioned* (malnutrition) or *secondary* malnutrition which is brought about by changes in the individual human economy or by factors other than dietary intake.

To these two we might add a third which etiologically may overlap one or both of the above but which, practically speaking, would aid in our appreciation of the problems of hidden hunger. This is *Malnutrition Incognito*, by which we mean malnutrition existing in an individual but overshadowed and obscured by some more obvious abnormality which claims our attention. In retrospect, the cycle of the old method of treating typhoid fever might be cited as one example. The sequence often went as follows: malnutrition plus typhoid infection plus treatment by an extremely limited diet—the total result being attributed to the typhoid infection alone. Contrast this with the modern treatment of typhoid fever where great emphasis is placed on meeting the nutritional requirements of the patient.

What we have learned about tuberculosis serves as another example. Here is an infectious disease

to which malnutrition is often a predisposing factor. The infection itself then produces a secondary state of malnutrition by upsetting the metabolic processes and the nutritional requirements. We finally learned that good nutrition plays an important part in the successful treatment of this disease. In the light of our present knowledge, it is easy to look backward and censure ourselves, but the important question is this: To what extent have we unmasked malnutrition incognito and to what extent is it still doing its dirty work unrecognized?

We have often engaged in controversies as to whether certain nutrients had any specific inhibitory effect on certain pathogenic organisms. Too often we have overlooked the practical fact that, regardless of its modus operandi, good nutrition is a basic physiologic requirement, which, to the degree neglected, leaves the human body to that extent devitalized, in addition to the debilitating effects of any other disease which may be superimposed. Probably, with reasonable accuracy in diagnosis, uncomplicated severe malnutrition rarely masquerades as other diseases. The danger lies in our overlooking less obvious malnutrition which is complicated, and often exaggerated, by concurrent pathology. This is a practical point in diagnosis which cannot be too strongly stressed.

Before the days of Pasteur much disease was explained on the basis of what would now be called metabolic disturbances. Pasteur's discovery of the bacterial origin of disease explained so many medical problems that there developed an unconscious tendency to overlook some of the other causes of disease.

Only a generation or two ago the doctor's role was to keep the patient from dying. He was called only as a last resort. He dealt primarily with very sick patients, with some one major causative factor predominating.

Today many of the doctor's problems are different. He often sees patients who are not "sick", in the older sense of the word, but who have minor functional disturbances of various kinds. Such patients require more comprehensive study. Often little is revealed by the ordinary physical examination, and frequently it is impossible to pin the diagnosis down to any one thing. Nutritional disorders of various kinds are prominent among the factors contributing to such conditions.

5. *Some Considerations Concerning Diagnosis.*—

The science of nutrition is relatively new. Procedures for nutritional diagnosis have developed slowly. The term malnutrition includes a group of diseases with as many manifestations as there are combinations of deficiencies of calories, protein, minerals, and the various vitamins. There is no one test upon which we can depend for complete nutritional appraisal.

However, differential diagnosis in the field of nutrition has improved greatly in the past few years. The clinician now has at his disposal a greater armamentarium of facts concerning the relationships of signs and symptoms to specific deficiencies. Indications are that much additional progress will be made in this field in the years immediately ahead.

Practically all medical diagnostic procedures fall within the following categories:

1. History
2. Physical examination
3. Laboratory procedures
4. Diet records
5. Therapeutic tests.

Without attempting to discuss these 5 categories with any degree of completeness, as far as nutrition is concerned, we might mention a few points in connection with each of these five types of diagnostic procedures:

1. *History.*—The chronically half-sick patient may have any number of complaints concerning how he feels, how he looks or how he acts. When any of the following complaints, signs, or symptoms come into the picture, malnutrition should receive at least some consideration in the differential diagnoses:

How he FEELS

- Lacks energy, feels lazy
- Tires easily
- Has a poor appetite
- Has a sore mouth, burning tongue
- Eyes itch and burn
- Eyes tire easily
- Has frequent colds and sore throat
- Has headaches (some forms)
- Feels older than his years

How he ACTS

- Cross and fussy
- Lacks mental alertness
- Broods or worries over trifles

- Has poor eyesight (some forms)
- Can't see well in dim light (night blindness)
- Work capacity low
- Finicky about food
- Acts older than his years

How he LOOKS

- Much overweight
- Much underweight
- Poor posture
- Rough bumpy skin of various kinds
- Pale skin due to anemia
- Poorly shaped bones
- Pot belly
- Spongy, bleeding gums
- Bad teeth
- Dull eyes
- Looks older than his years

These are just some of the complaints that may lead us to consider nutritional difficulties in making the diagnosis.

2. *Physical Examinations.*—Usually in the milder forms of malnutrition, little is revealed by the physical examination. However, certain signs which are often associated with malnutrition are easily overlooked. *For example*, appearance of chronic fatigue, pallor, rough skin, bad posture, spongy bleeding gums, sore red tongue, crusty eyelids, photophobia, sores at the angles of the mouth.

3. *Laboratory.*—It is outside of the scope of this discussion to go into laboratory procedures. However, there is one simple test, the value of which has often been overlooked. It is the hemoglobin determination. The few mass studies of hemoglobin levels, made in various sections of the country, have indicated that anemia is very common.

At what hemoglobin level do we consider a person anemic? This question is often asked. In answer we might say that *any* hemoglobin level *below the physiological optimum* warrants attention. If 14 to 16 grams of hemoglobin per 100 cc. of blood is optimal, why set as a standard a purely arbitrary level below this range?

In areas where hookworm, malaria, or other anemia-producing diseases are endemic, these cannot be ignored. However, a person can have anemia-producing diseases superimposed on a state of chronic malnutrition.

4. *Diet Records.*—Valuable information can be brought to light by the use of diet records. While

they yield only circumstantial evidence, diet records or "food diaries", in which the patient lists all foods eaten each day for a week, often point up dietary deficiencies. Obviously such records are more valuable if the approximate amount of each food is given. For practical purposes this can be given in household measurements (cups, tablespoons, teaspoons, etc.). One of the chief values of such a record is that it gives the physician a basis upon which to work in attempting to improve the patient's diet. If he can take the patient's own records and suggest more of *this* and less of *that* type of food, it is easy for the patient to understand and follow suggested changes. Recommendations to "*eat a balanced diet*", or to "*get more vegetables*" are too vague and indefinite to stimulate more than a perfunctory response. Subsequent diet records are of value in measuring the patient's response to recommendations for improving his diet.

5. *Therapeutic Tests.*—Therapeutic tests are among the most reliable tests available for the differential diagnosis of specific nutritional deficiencies. Since a number of nutrients are now available in pure form or as concentrates, therapeutic tests are taking on greater practical significance. Such tests may have different degrees of specificity. It would seem that they could be used much more widely as a fact-finding procedure.

In malnutrition the etiologic agent, so-called, is the lack of something rather than the abnormal presence of something. The lack may be due to an intake below normal requirements, to increased needs, or to factors which interfere with efficient utilization. In any case, we have made only the first step in the diagnosis when we learn "*What*" is lacking. The important question is "*Why*." While we must determine the immediate cause, we must also search for the underlying factors which are basically responsible for the condition; in other words, "*Why*." It is toward these underlying causes that effective corrective measures must be directed. While acute conditions often require heroic measures, the average case of malnutrition is of a mild chronic nature and the corrective measures may seem rather hum-drum and undramatic to the patient—and the doctor. The condition is often intimately associated with, or due to, food patterns and habits of long standing which are hard to change.

Usually there is no strong motivating influence

of the type generated by an emergency situation. Thus, a regimen must be set up based not only on what would be good for the patient under ideal conditions, but also considering *what he is likely to do under existing conditions*. Not forgetting the difficulties in differential diagnosis of nutritional status, probably the most difficult part of the whole process is to get new food habits established and to make them stick.

NUTRITION—A PROBLEM OF PREVENTIVE MEDICINE

The American public is gradually learning to appreciate the value of the physician as a guide and counselor in matters pertaining to health as well as a "very present help in time of trouble". In the past, the physician was called upon only in emergencies. He was expected to accomplish dramatic results when everything else had failed—and that is what he did. He had too little opportunity for *health guidance* of his patients. His opportunity to use his knowledge of nutrition was largely confined to prescribing diets for babies and sick people. Formerly, the expression, "He put me on a diet", meant that something was radically wrong and necessitated drastic changes in food intake.

Fortunately this attitude is changing toward the more efficient and effective use of the doctor's special training. Seeing the doctor twice a year is becoming a habit with some people and does not automatically label them as psychoneurotics or hypochondriacs. Thus, the popular demand for the practice of preventive medicine by the family physician is gradually increasing.

In the field of nutrition, we have an opportunity to carry the concept of preventive medicine a step further than has been done in the prevention of clear-cut disease. We must strive toward the highest health levels which are possible of attainment. Freedom from obvious disease is not enough. The whole range of health levels, from fatal disease states, on the one hand, to buoyant health on the other, is greatly affected by the food habits of the individual. While poor nutrition can, and often does, contribute to mortality, optimum nutrition can contribute to that state of health which is even better than average—that extra portion of good health that some individuals have. Nutrition, good or bad, makes its contribution to all grades of health status. Poor

nutrition can kill us, while optimum nutrition can take us far on the way toward optimum health.

We would not say that good nutrition guarantees good health, but we can say that optimum health is impossible in the absence of good nutrition. Thus, nutrition is a fundamental factor upon which many other factors are conditioned.

In the treatment of any disease we would do well to remember those fundamental physiologic requirements which exist and which may be altered by the presence of disease. With a large percent of the population admittedly existing on suboptimal diets, we could increase our therapeutic successes by giv-

ing more attention to known nutritional requirements as one of the first steps in therapy.

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Aspirin May Contribute to Hemorrhage.

Recent evidence that aspirin or the other salicylates may lower the prothrombin (clotting factor) in the blood and thus contribute to hemorrhages re-emphasizes the need for caution in the use of this drug. *The Journal of the American Medical Association* for March 18 advises in an editorial which says:

"Aspirin, or acetylsalicylic acid, has been used in enormous quantities throughout most of the world for some forty-five years. Many persons seem to have a mild idiosyncrasy to this drug or to the other salicylates and consequently avoid its use; the vast majority take it with apparent impunity. . . . Deaths from aspirin have been reported; these appear to have been more frequent in England than in this country.

"New evidence indicates that aspirin and the other salicylates produce a physiologic effect which cannot be ignored. About 1941, C. F. Huebner and K. P. Link of the Wisconsin Agricultural Experimental Station discovered that dicumarol [an anticoagulant obtained from sweet clover] when given by mouth induces a shortage of prothrombin in the blood. They found also that dicumarol could be qualitatively degraded to salicylic acid. Later, Link and his co-workers tested the action of salicylic acid itself. When single doses of salicylic acid were given to rats kept on an artificial diet which was low in vitamin K, a decrease of the prothrombin in the blood occurred. Also if the salicylic acid was given over a long period, hemorrhages resulted; if vita-

min K was administered the hypoprothrombinemia [prothrombin deficiency] did not develop. More recently other investigators found that salicylic acid would act in the same way on human beings and that when vitamin K was administered simultaneously with the salicylic acid the fall in prothrombin levels was prevented. The administration of vitamin K after the production of hemorrhage by dicumarol or salicylic acid, however, is of little use.

"These observations offer a plausible explanation of such events as the report of a British physician in 1943 concerning the development of nosebleed in three cases after taking large doses of aspirin or the frequent occurrence of bleeding in patients with rheumatic fever who are receiving large doses of salicylates. . . . When . . . hemorrhages occur after the taking of dicumarol or the salicylates, vitamin K is not likely to be effective; then proper treatment may include the giving of a blood transfusion.

"The mass of evidence so far available indicates that aspirin and the salicylates are among the least toxic of active pharmacopeial preparations. This status, however, should not be interpreted as an excuse for failure to recognize hazards connected with their abuse or even under certain circumstances of established usage. Their ability to produce hemorrhage in some cases appears to be counteracted by early administration of vitamin K. It does not now seem necessary to administer vitamin K to all patients receiving salicylates; those who are to receive large doses for a long time may appropriately be given vitamin K."

THE SUN AND THE HEAT DISEASE*

ST. GEORGE T. GRINNAN, M.D.,
Richmond, Virginia.

The sun, like some drugs, can cure and can kill. Animals often show more intelligence than man when they seek the shade. Man's brain endures intense cold—sixty degrees below zero without injury. At the Arctics men have endured sixty degrees below zero or one hundred and sixty degrees below body temperature.

In heat 30 degrees above body temperature man may be made ill or killed. Extremes of heat and cold require rest. During blizzards in the northwest the Indian often remains wrapped in a blanket in his tent for days. In hot countries a rest of several hours in the day is common.

Jacques Loeb said that if man's temperature was 90.6 instead of 98.6 he could easily live for 500 years. Man is so hot he burns out quickly.

There is more intelligence in the temperate zone than in the tropics. Alexis Carrel says Northern France is more intelligent than Southern France. Very rarely a genius is found in the tropics, although Rabindranath Tagore of India was a Nobel prize man. Constantine, of Africa, who revolutionized medicine, was certainly brilliant, he lived about fifteen hundred years ago.

Look at the Central American countries, Mexico to Bolivia, heat holds them back; Tropical Africa for the pot bellied Ibo.

Lowell Thomas spent two years in India; he said heat is the cause of India's helplessness. Read his book "The Black Pagoda". The untouchables and Dravidians are helpless and hopeless. The Englishman dares not stay in India more than seven years at a time, and then he has to spend a part of every year in Darjeeling or Kashmir, foothills of the Himalayas. The turban and white clothes for sun reflectors protect some people in hot zones. In some of the islands of the Pacific the radiation is so great that only the lowest form of humanity live there. In India the woman-child has a baby at 12 or 13, and dies of old age at 36.

The blond is a product of Scandinavian countries. In Africa the negro was tanned black or he could not have lived there.

The negro has a tropical lung, expansion one-half to one inch, while the white man has an expansion of 3 to 4 inches. The blond would become extinct in the tropics; the negro would become extinct north of latitude 45.

What became of the 500 negroes taken to New Hampshire about 1845 or 1850 to be free? They all died out.

What became of the 16,000 negroes taken to England in the seventeenth century? They all died out.

What became of the thousands of negroes taken to Rome as slaves? Only a Neapolitan tint remains. Rome is the same latitude as Philadelphia.

Usually writers seek a cool place in hot weather to do their work. We get 30 per cent more radons and thorons in the night than in the day; the brain batteries are re-charged while we sleep.

One of the seven wise men of the world, Roger Bacon, was put in jail about 1250 for ten years for saying he could extract sun beams out of cucumbers. He was seven hundred years ahead of his time when he ate sunshine—vitamins—in the shade.

In 1901, in New York City, I saw many sun-strokes that were brought into the hospital, usually from 10:00 P. M. to 3:00 A. M. The temperature was 105 to 108. All whose temperatures reached 107 died. Recovery was slow, and good recovery required several months. In some cases mentality was permanently impaired. We have here in Richmond many cases of the heat disease, especially in young people, with a history of sun exposure, hatless, bare arms and chest—the dangerous sunsuit—resulting in a temperature as long as ten days, with headache, loss of appetite, and a feeling of being weak and tired.

One young college boy played golf all day, hatless, bare arms and part of chest. He was a blond and was sick two months, in spite of salt treatment by several doctors.

In Arlington, July, 1943, an infant, age about fifteen months, was put in the sun for a tan. He was left too long, had a sunstroke and died the same day.

The Canadian medical schools recommend exposure of one-eightieth of the body for sun tan—only

*Read at the regular meeting of the Richmond Academy of Medicine, November 9, 1943.

hands and face. We have to beware lest the hatless child with a sun suit does not become the repeater in school; especially is this true of blonds.

A boy of sixteen wanted a sun tan. He exposed himself in the sun on a hot porch roof for an hour each day for some weeks. He went to a mental sanatorium for six months. We not only have lunatics but solar-tics.

The sun suit is often the cause of the heat disease.

Mothers need better advice than they now get about the protection of infants and children from the summer sun, with no hat and too much of the body exposed if the sun is 30 degrees above the horizon.

The air pilot in India wears a sun helmet and takes salt. We must keep in mind that the sun's rays contain 10 per cent x-ray.

The local paper reports "Somewhere in the South Pacific, September 6th (delayed) More Concern Felt Over Sunburn Than Shrapnel Wound". A sailor was struck in the shoulder by a piece of shrapnel from a Jap bomb on Guadalcanal and it knocked him out. But when he came to the first aid station the doctor was more concerned about the sunburn

received while lying unconscious in a fox hole than he was about the shrapnel wound.

I have seen many heat disease cases every summer, but prior to 25 years ago the ten day summer fever was not recognized as a result of sun heat.

There are more people in mental institutions in Virginia than there are in colleges. The further one goes into hot countries the lower the I.Q. sinks.

In hot weather more people are allergic to ragweed than to reason.

Soldiers have died from sunstroke in army camps in the South after marches in hot summer sun with heavy packs—some first classed as drunks, then the guard-house, the hospital, and death.

Children show retarded growth, like domestic animals, and inferior size under tropical heat. Vital capacity of Filipino college students is only a little more than half as great as that of students of the northern part of the United States (Dr. C. A. Mills, *J.A.M.A.*, October 31, 1943, page 531—Climate and Disease).

We should pay more attention to the heat disease.

925 West Grace Street.

Penicillin Effective in Bone and Blood Infection.

The successful treatment with penicillin of a case of infection of a bone (osteomyelitis) and of the blood (septicemia) with *Staphylococcus albus* is reported in *The Journal of the American Medical Association* for April 8 by O. Charles Ericksen, M.D., Sioux Falls, S. D.

The patient, a white man aged 29, a farmer, was admitted to the McKennan Hospital, Sioux Falls, on October 10, 1943, with the complaints of weakness, chills and fever and also pain in the right hip. Treatment with sulfonamide drugs was without any apparent benefit. On November 4, treatment with penicillin was started, with immediate improvement. Blood cultures taken daily following the inception of the penicillin treatment at no time revealed any bacterial growth. He had some febrile reactions to the penicillin, the temperature, following each in-

jection into a vein, ranging from 102 to 106.4 F., for about one-half hour or so but not preceded by a chill and not causing the patient to feel at all ill. When administration was given by injection into a muscle the temperature at no time was above normal. On November 18 the patient was allowed out of bed and on the following day was sent home. When last seen the following January 4 he said he felt fine and had no complaint whatever.

Commenting on the case Dr. Ericksen says that "I feel that the results obtained, to say the least, were miraculous. The patient improved almost instantly and declared that he had a feeling of well being. The febrile reactions in this case, in all probability, were due to pyrogenic [fever inducing] substances that were in the penicillin. When the penicillin was given intravenously, violent febrile reactions were obtained, but when it was given intramuscularly these febrile reactions did not occur."

PUBLIC HEALTH

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia.

The report of the Bureau of Communicable Diseases of the State Department of Health for May, 1944, as compared with the same month in 1943, and for the period of January through May, 1944, compared with the same period in 1943, follows:

	May 1944	May 1943	Jan.- May 1944	Jan.- May 1943
Typhoid and Paratyphoid Fever	10	7	44	51
Diarrhea and Dysentery	218	182	897	602
Measles	2,570	1,705	15,712	7,852
Scarlet Fever	265	191	1,748	969
Diphtheria	14	14	104	152
Poliomyelitis	2	2	6	12
Meningitis	50	98	370	590
Undulant Fever	5	1	17	10
Rocky Mountain Spotted Fever	5	0	7	1
Tularemia	2	0	18	24

CANCER MORTALITY IN VIRGINIA

Although malignant growths of all types are included in the term "cancer" in vital statistics, the great majority of deaths classified under this title are reported as carcinoma, sarcoma, or epithelioma. Deaths reported from cancer of two or more parts of the body are assigned, according to standard practice, to the original site if stated, rather than to the organ of metastasis.

During the past thirty years in Virginia, a consistent upward trend is seen in mortality for cancer in both the white and colored races. Total cancer rates increased from 48.1 per 100,000 population in 1913 to 82.4 in 1943. The white rate of 51.3 three decades ago had risen to 84.8 last year; and the colored rate of 41.1 in 1913 had increased to 74.8 in 1943. Throughout the entire period, the white rate was much in excess of the colored. Last year in the State, there were 2,363 deaths from cancer, of which 1,850 were in the white race and 513 in the colored.

Deaths from cancer occur at all ages, although maximum rates are found in the later years. The death rate in Virginia last year for ages under 25 years was 3.4 per 100,000 population. The rate rises gradually to age 45 years, after which it in-

creases abruptly. Mortality rates per 100,000 population for ages past 24 years are as follows: 25 to 44 years, 32.3; 45 to 54 years, 147.5; 55 to 64 years, 291.2; 65 to 74 years, 522.9; and 75 years and over, 934.7.

Cancer death rates among females in both the white and colored races exceed those among males. In 1943 in the State, female deaths constituted 57 per cent of cancer deaths. There were 1,343 female deaths, of which 1,030 were white and 313 colored; and 1,020 male deaths, of which 820 were white and 200 were colored. Ten years ago, female deaths comprised 59 per cent, and male deaths 41 per cent. It is interesting to note, during the period, the increasing proportion of male cancer deaths relative to female. As about 50 per cent of fatal cancers among females and about 15 per cent among males affect accessible sites, the male rate would be particularly subject to apparent gain in later years on account of increased medical knowledge and improved diagnostic methods.

According to site, the digestive tract and peritoneum showed the highest ratio of deaths, constituting 43 per cent of cancer mortality in Virginia in 1943. Among this group, cancer of the stomach and duodenum lead, with 344 deaths. Next came cancer of the intestines, rectum and anus, with 335 deaths. Then followed cancer of the liver and biliary passages, 205 deaths; next, the pancreas, 79; the esophagus, 33; and other sites, including the mesentery and peritoneum, 28 deaths. Cancer of the uterus totaled 336, and other female genital organs, 57. There were 243 deaths from cancer of the breast; 151 of the respiratory system; 138 of the male genital organs; 84 of the urinary organs (male and female); 75 of the buccal cavity and pharynx; 56 of the skin; 39 of the brain and other parts of the central nervous system; and 160 of other and unspecified sites.

The rank of cancer as a cause of death in Virginia has changed materially during the past three decades. In 1920, for the first time, cancer appeared among the leading causes of death in the State, occupying seventh position. Ten years later, this cause

held the same position. By 1943, cancer mortality had risen to fourth place. The advance in position, however, has been due not only to the increase in mortality rates for this cause, but in the decline in death rates from certain diseases which, in earlier years, outranked it, notably tuberculosis, pneumonia and diarrhea.

As cancer is largely a disease of middle adult life and old age, no accurate measure of rate increase can be made which does not make allowance

for the aging of the population. Even when the effects of age changes in the population have been eliminated from our figures by standardization, cancer mortality in Virginia shows a significant upward trend throughout the years. However, there is a generally accepted belief that improvement in diagnostic techniques, resulting in more complete and accurate diagnosis of this disease, is responsible for a considerable proportion of the recorded gain in cancer mortality.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE,
MEDICAL SOCIETY OF VIRGINIA

The patient was a 45 year old white multipara, gravida 13, para 12, at term. She had no prenatal care and was first seen by a physician because of lower abdominal pain beginning approximately six hours following a fall. The physician who saw the patient did not examine her, but advised that a midwife be called. She continued to have pain and two hours later had a severe abdominal pain followed by faintness and nausea. The patient was later taken to the hospital by her husband and at that time, nine hours after the onset of abdominal pain, there was evidence of profound shock and slight vaginal bleeding. Blood pressure 160/80. Laboratory studies revealed red blood count 4,260,-000, hemoglobin 78 per cent, and white blood count 19,950. Urinalysis (catheterized) showed four plus albumin and four plus R.B.C.

A diagnosis of ruptured uterus was made and, nine hours after admission, Caesarean section was performed. There was a large amount of free blood in the peritoneal cavity and a rupture of the lower uterine segment extended into the broad ligament and vaginal vault. Following disengagement of the vertex there was profuse bleeding. A supracervical hysterectomy was done. The patient died before bleeding could be controlled.

COMMENT

It is believed that this case should be classified as a non-preventable obstetrical death. Apparently rupture of the uterus occurred as a result of trauma. These are factors that should be evaluated. The patient did not have adequate professional care before being sent to the hospital. She had no prenatal care and had a toxemia of pregnancy as revealed by findings at the time of admission to the hospital. This shows the importance of knowing blood pressure under usual conditions to get a correct impression when abnormalities arise. A blood pressure of 160/80, far from the shock level, suggests a high pressure before the onset of the bleeding. Since the patient was admitted to the hospital with evidence of intra-abdominal bleeding, it is assumed that the delay between the time of admission (6:00 A. M.) and operation (3:00 P. M.) must have been due to the time involved in the treatment of shock and the securing of blood donors. The amount of bleeding encountered during operation was extensive. Earlier operation and facilities for replacement of blood loss may have altered the outcome. Uncontrollable conditions may have been present, which prevented any other type of management.

MENTAL HYGIENE

On Friday, June 9, the Mental Hygiene Society of Virginia, cooperating with other health groups, joined with the Richmond Health Council in presenting a symposium on health education. Dr. M. A. Tarumianz, Superintendent of the Delaware State Hospital, and Director of Mental Hygiene Clinics for the State of Delaware, was the guest speaker, representing the Mental Hygiene group. Dr. Tarumianz presented a broad comprehensive plan of action which not only would be applicable to our present situation coming out of the war, but also for the near and distant future. Dr. O. B. Darden in a prepared discussion, which was not made at the meeting because of conflicting engagements, has covered these points quite adequately and it is hoped will be presented at some opportune time. Dr. H. Marjorie Sloane, Psychiatrist of the Children's Memorial Clinic, also discussed the paper in a very helpful and interesting manner. Other discussants brought out the point that there was a great need for psychiatry in industrial establishments, and a still greater need for a simple and understandable

presentation of Mental Hygiene through pamphlets, lectures, radio, schools, etc.

Dr. Tarumianz was presented to the assembled group by Dr. Joseph E. Barrett, president of the Mental Hygiene Society.

A feature of Dr. Tarumianz's brief visit to Richmond, was a luncheon meeting at the Commonwealth Club, with Dr. Howard R. Masters as the host. In addition to Dr. Tarumianz, others who were guests of Dr. Masters were Mr. W. Dan Ellis, Dr. J. Shelton Horsley, Dr. J. Asa Shield, Dr. H. C. Henry, Reverend J. J. Scherer, Dr. R. Finley Gayle, Jr., Dr. Dewey Davis, Dr. James K. Hall, Dr. Joseph E. Barrett, and Mr. F. W. Gwaltney.

The Executive Committee of the Mental Hygiene Society had a brief meeting after the luncheon, with Dr. Joseph E. Barrett, presiding, and elected Mr. Harold I. Baumes, Executive Secretary of the League of Virginia Municipalities, as Treasurer of the Society, and made some preliminary plans as to the work which the Society is to do.

WOMAN'S AUXILIARY to the MEDICAL SOCIETY OF VIRGINIA

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President-Elect—MRS. PAUL C. PEARSON, Turpin.

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Chairman, Press and Publicity—MRS. E. LATANE FLANAGAN, Richmond.

Revisions.

The attention of the auxiliary is called to the report of the National Chairman of Revisions in the March issue of the *Bulletin*.

This report is concerning the new proposed constitution and by-laws of the Woman's Auxiliary to the American Medical Association prepared by a member of the staff of the Bureau of Legal Medicine and Legislation and approved by the Advisory

Council of the Woman's Auxiliary.

The Board of Directors recommended that action should not be taken upon the proposed constitution and by-laws until the annual meeting in June, 1944.

Whereas the State Auxiliary patterns its constitution and by-laws after the National, and the County Auxiliaries likewise after the State, this new document will be of special interest and concern to all.

MRS. WILLIAM LETT HARRIS,
Chairman of Revisions.

Auxiliary Meetings.

WARWICK

The Warwick County Medical Auxiliary held a

luncheon meeting May 3, at the Hi-Hat Club. Nineteen members and three guests were present. Four new members were welcomed by the auxiliary.

A musical program of piano and vocal selections followed.

The auxiliary is to be responsible for hostesses for the Hospitality House every third week.

The members will contribute and arrange flowers at the Hospitality House and USO Club for the month of August.

The auxiliary for several years has made and given layettes to indigent obstetrical cases in the city. This year the visiting nurses have requested fifteen layettes.

MARION HOLDERBY (Mrs. C. E. H.),
Chairman, Press and Publicity.

NORFOLK

A general meeting and tea was held May 17 at the home of the president, Mrs. R. M. Reynolds, at Ocean View.

Mrs. Southgate Leigh, Jr., president-elect, will become president at the October meeting. A slate of nominations for officers was presented by Mrs. W. E. Butler for the Nominating Committee. The slate was adopted unanimously and the officers will be voted on in the Fall. It presented the names of Mrs. C. M. McCoy for president-elect; Mrs. Charles Lupton, Mrs. James Anderson, and Mrs. John St. George, vice-presidents in the order named; Mrs. Kenneth Wallace, recording secretary; Mrs. M. F. Brock, assistant recording secretary; Mrs. A. K. Wilson, treasurer; Mrs. Mallory Andrews, assistant treasurer; Mrs. P. B. Parsons, corresponding secretary; Mrs. Brock Jones, Jr., assistant corresponding secretary; Mrs. C. C. Smith, parliamentarian; Mrs. R. S. Kight, historian.

Mrs. Reynolds announced the annual meeting of the American Medical Association and the Woman's

Auxiliary to the Association to take place in Chicago in June. She named as delegates to the State Convention of the Woman's Auxiliary to the Medical Society of Virginia in Richmond, October 23-25, Mrs. Leigh, Mrs. McCoy, Mrs. S. Byron Pope, Mrs. Julian Rawls, and Mrs. Horton, and as alternates, Mrs. Brock, Mrs. Butler, and Mrs. A. K. Wilson.

It was reported that pictures of all presidents of the Medical Society would be hung in their library in the Medical Arts Building under the auspices of the auxiliary by Fall.

Officers and chairmen read their reports. These showed the auxiliary to have 82 members to date and Mrs. Leigh introduced as the newest member, Mrs. W. C. Salley.

Tea was served following the meeting and Mrs. Reynolds was assisted by Mrs. Butler, Mrs. Richard Peake and Mrs. Brock.

CLARA P. BROCK (Mrs. M. F. Brock),
Chairman, Press and Publicity.

RICHMOND

The May meeting of the Auxiliary to the Richmond Academy of Medicine was held on the 19th. In the absence of the president, Mrs. A. G. Shetter, Mrs. L. H. Apperson, vice-president, presided. Mrs. Clyde West of Alexandria, president of the Woman's Auxiliary to the Medical Society of Virginia, was present and brought greetings and a message of encouragement from the other auxiliaries in the State. The guest speaker was Mrs. Thos. W. Murrell of Richmond, who spoke on "Flower Arranging".

This was the last meeting until September, at which time will be held the election of officers and a discussion of plans for the State convention to be held in Richmond in October.

MRS. B. B. BAGBY, JR.,
Publicity Chairman.

During Food Shortages

It is well to bear in mind that *dried brewers yeast weight for weight, is the richest food source of the Vitamin B. Complex.* For example, as little as 1 level teaspoonful (2.5 Gm.) Mead's Brewers Yeast Powder supplies: 45 per cent of the average adult daily thiamine allowance, 8 per cent of the average adult daily riboflavin allowance, 10 per cent

of the average adult daily niacin allowance.

This is in addition to the other factors that occur naturally in yeast such as pyridoxin, pantothenic acid, etc.

Send for tested wartime recipes, the flavors of which are not affected by the inclusion of Mead's Brewers Yeast Powder. Mead Johnson & Company, Evansville, Ind., U.S.A.

BOOK ANNOUNCEMENTS

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us same.

Radiation and Climatic Therapy of Chronic Pulmonary Diseases. With Special Reference to Natural and Artificial Heliotherapy, X-Ray Therapy, and Climatic Therapy of Chronic Pulmonary Diseases and All Forms of Tuberculosis. Edited by EDGAR MAYER, M.D., F.A.C.P., F.A.C.C.P., Assistant Professor of Clinical Medicine, Cornell University Medical College, New York City; etc. With the Collaboration of Twenty-two Contributors. The Williams & Wilkins Company, Baltimore. 1944. xiii-393 pages. Cloth. Price \$5.00.

Technique In Trauma. Planned Timing in the Treatment of Wounds Including Burns. From the Montreal General Hospital and McGill University. By FRASER B. GURD, M.D., C.M., and F. DOUGLAS ACKMAN, M.D., C.M. In Collaboration with John W. Gerrie, M.D., C.M., Edward S. Mills, M.D., C.M., Joseph E. Pritchard, M.D., and Frederick Smith, M.D. Philadelphia, J. B. Lippincott Company. 1944. vii-69 pages. Illustrated. Cloth. Price \$2.00.

Minor Surgery. Edited by HUMPHRY ROLLESTON and ALAN MONCRIEFF. Philosophical Library. New York. 1944. viii-174 pages. Illustrated. Cloth. Price \$5.00.

The Management of Neurosyphilis By BERNHARD DATTNER, M.D., Jur. D., Associate Clinical Professor of Neurology, New York University Medical College. With the Collaboration of Evan W. Thomas, M.D., Gertrude Wexler, M.D., and Joseph Earle Moore, M.D. Grune & Stratton, New York. 1944. 398 pages. Cloth. Price \$5.50.

Office Endocrinology, Second Edition. By ROBERT B. GREENBLATT, B.A., M.D., C.M., Professor of Experimental Medicine, University of Georgia School of Medicine; Director, Sex Endocrine Clinic, University Hospital, Augusta, Georgia. Foreword by G. LOMBARD KELLY, M.D., Dean, University of Georgia School of Medicine. Charles C. Thomas, Baltimore, 1944. 243 pages. Price \$4.00.

It would be apt if this book had a subtitle indicating that six-sevenths of the pages are devoted strictly to problems concerning the female and male sex hormones and their immediate functional relatives.

The major portion of the chapters deals with female endocrinology. In addition to the usual subjects in this category there are discussions of the hormonal therapy of uterine fibromyomata, micturitional disorders in the female due to endocrine imbalance and hirsutism. Of interest is the therapeutic trend to relatively more frequent use of androgens in female disorders and to relatively less frequent use of gonadotropins. A second division

contains skeleton summaries of the physiological actions and indications of some of the hormones. Notes on pellet implantations and a table of the natural estrogens with the proprietary names and the usual dosages are included. The third section concerns itself with the more common endocrine conditions in the male. This subject was not treated in the first edition.

The book falls short in discussions of subjects which are aside from its main interest, chiefly because of enforced brevity. For example, in the chapter on panhypopituitarism no mention is made of the difficult differential diagnosis from anorexia nervosa, a point of marked practical significance. Again, in adolescent acne, the erroneous impression is given that estrogenic therapy is used solely in the female.

This synoptic manual is highly serviceable for use in the management of the common endocrine disorders in women. It offers effective therapeutic advice in this rapidly advancing field with many alternatives when the measures in current practice are found wanting.

M. E. B. OWENS, JR.

Small Community Hospitals. By HENRY J. SOUTHMAYD, Director, Division of Rural Hospitals, The Commonwealth Fund. And GEDDES SMITH, Associate, The Commonwealth Fund. New York, The Commonwealth Fund. 1944. 182 pages. Cloth. Price \$2.00.

For more than a decade and a half The Commonwealth Fund of New York City has helped to finance and guide the development of rural hospitals, distributed over a number of states. The emphasis has been broad, including every aspect of hospital functions, standing and education of staff, and community relationships.

This volume tells an interesting story replete with rich experience, wisdom, and common sense. The final chapter *The Hospital and the Countryside* is predictive, pointing to the advantages of organizing smaller community hospitals around a medical center on a democratic basis to share the benefits of group action. Many think that this pattern of hospital organization is inevitable in the future. *Small Community Hospitals* is a "must" for those in any way interested in such institutions.

W. T. S.

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The Annual Meeting

THE Annual Meeting, October 23-25, in Richmond, promises to be an excellent one. Already more interest than usual is being shown. The doctors throughout the State have indicated that they want a meeting that will help them with their problems at home. They are still interested in the war, of course, and what their confreres are doing in war medicine and surgery, but they realize they have a job at home and they want all the help they can get.

The Program Committee was embarrassed by the number of good papers that were submitted. They had to decline more than half. Such an abundance of papers insures a good scientific program, but it makes the task of the Program Committee a hard one. It is the hope of the Committee that the authors will send the papers for publication in the MONTHLY. The program will follow the usual pattern with several important exceptions. On Monday there will be meetings of the Council and the House of Delegates. The golfers will be properly cared for by Dr. T. W. Murrell and his committee. On Monday evening there will be the formal opening of the session at which time Governor Darden will address the meeting on the medical needs of the State. We do not have to tell our readers that Governor Darden is an interesting and forceful speaker. No Virginia doctor should miss this meeting, for whether you will agree with him or not, Governor Darden will give you something to think about. Tuesday morning there will be scientific papers by members of the Society and one by an invited guest, Dr. Alexis F. Hartmann, prominent pediatrician of St. Louis. In the afternoon there will be clinics and round table discussions at the Medical College of Virginia on some subject such as peptic ulcer. For Tuesday evening, Dr. Haag and his committee have prepared an entertainment designed to get your mind off of medicine and give you a bit of relaxation. On Wednesday morning a symposium on penicillin is being planned, speakers to be announced later. The completed program will appear in a future issue of the MONTHLY.

The General Practitioner

"There are men and classes of men that stand above the common herd: the soldier, the sailor, and the shepherd not infrequently; the artist rarely; rarer still the clergyman; the physician almost as a rule. He is the flower (such as it is) of our civilization; and when that stage of man is done with, and only remembered to be marveled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably exhibited the virtues of the race. Generosity he has, such as is possible to those who practice an art, never to those who drive a trade; discretion, tested by a hundred secrets; tact, tried in a thousand embarrassments; and what are more important, Heracleian cheerfulness and courage. So it is that he brings air and cheer into the sickroom, and often enough, though not so often as he wishes, brings healing."

ROBERT LOUIS STEVENSON.

RECENTLY a distinguished visitor addressed the Social Welfare Interpretation Division of the Richmond Community Council on the "Newer Types of Medical Practices". He thought that the practice of medicine of the future would be in groups and spoke disparagingly of the general practitioner's little black bag, as if the doctor carried his entire armamentarium there. I do not know where our visitor got his idea about the general practitioner, certainly not in Virginia. Dr. John Brown and Sir James Barrie in their delightful pictures of the general practitioner perhaps have over-emphasized his quality of heart and the hardships he has to endure, so that the public thinks of the country doctor as being big-hearted and willing, but perhaps a little lacking in knowledge, especially the newer knowledge, of disease. The general practitioners we know have this fine quality of heart, although they try to conceal it as much as possible. In addition they have an up-to-date knowledge of disease. They make intelligent use of laboratories. When a central laboratory is not convenient, they have a laboratory of their own with a competent technician in charge. They are not weak on diagnosis as was implied, but send their patients to hospitals because methods of treatment have become complicated and the home no longer has facilities for giving modern treatment. To equip a home for so simple a thing as the conduct of a normal labor case, and be prepared for such emergencies as might arise, would cost as much as the hospital charges for the care of such cases. A seriously ill medical patient may need oxygen, blood transfusions, intravenous fluids, daily check on the concentration in the blood of the drugs used, etc. It is uneconomical to do this in the home, even if it were possible.

Our guest criticised the hospital service associations, which were started by doctors, on the ground that they did not try to keep people from going to hospitals. He made a comparison with fire insurance companies and said that the latter would go broke if they did not keep up a fire prevention campaign. Many of his audience got the impression that doctors are not interested in disease prevention and took no part in that aspect of medicine. A moment's reflection would show the foolishness of such a comparison. Any one of a dozen discoveries in preventive medicine has saved more money, to say nothing of lives and suffering, than all the fire prevention tactics. We would be willing to wager that more worth-while preventive medicine is done in pediatrics alone, than is accomplished in fire prevention by all the fire insurance companies combined.

So many inroads have been made in the general practitioner's domain that the idea has gone forth that he has been outmoded. In the past few years a reaction has set in, and now there is a growing feeling that he is really necessary and that he fits in with the general scheme of civilization. Our own opinion is that there will always be a

family doctor as long as there is a home and a family. He is a part of that picture. The only trouble with the general practitioner is that there are not enough of them.

Medicine has been criticised because of the uneven distribution of doctors. The same criticism applies to other necessities of life such as sunshine and rain. No one has been able to do anything about the weather, but we can do something about the doctor. Doctors are human and they go where they think they are wanted and where there are satisfactory living conditions for their families. Any community that is without a doctor can get one (in normal times) if they show enough interest. A well-equipped office and a nice home would land many a man just starting out in his career, and possibly some who have made a poor start. Such a procedure would be less costly than establishing "Mayo Clinics" at every cross roads. Besides it would more nearly fit the needs and would require no legislative enactments.

Tropical Medicine

THE War has brought many new responsibilities to the medical profession. It has had to send the best part of its membership to the armed forces. With reduced personnel it has had to care for seemingly increased needs of the civilian population. It has had to defend itself against political attack. In addition to all of this, it must learn a new branch of medicine that has not been taught in the medical schools.

Medical missionaries and others interested in tropical medicine in the past have had to take a course in tropical medicine in New Orleans or London, before going to the tropics for their practical experience. The Army maintains an excellent school in tropical medicine in Washington for its own personnel.* It seems likely that before long the tropical diseases will be coming to us. Distance and time so far as they were barriers to disease have been eliminated. A person who contracted a disease in Africa or New Guinea might well be in Minneapolis before he had any intimation that he was infected. Returning soldiers and sailors could easily introduce malaria to the upper Mississippi Valley and other parts of the country that have long been free from that disease. Already a considerable group of patients with filaria are being treated in Virginia. We will have to learn to recognize many intestinal parasites whose names we hardly knew a year ago. Last August a case was reported in the Proceedings of the Royal Society of Medicine of a woman who was treated in a London Hospital for eclampsia. She died undelivered and at autopsy it was learned that she had cysticercosis cellulosae of the brain. So even an obstetrician will have to know his tropical medicine.

It will not be possible for all of us to take courses in tropical medicine, but we can read about tropical disease as accounts are published in the journals, and we can discuss them in our medical meetings. Already Virginia doctors are familiar with amoebiasis, sprue, hook worm and pellagra, diseases that were formerly considered tropical or at least semi-tropical. We must enlarge our thinking to include onchocerciasis, Giardia lamblia infection, trypanosomiasis, schistosomiasis, kala-azar, and many others of which the editor has never heard.

*A new school of tropical medicine is being started on Treasure Island, in San Francisco Bay, which will be open to civilian teachers in medical schools.

Societies

James River Medical Society.

This Society, at a recent meeting, elected its delegates and alternates to the Richmond meeting of the State Society. Its present officers are: President, Dr. T. L. Driscoll of Columbia; vice-president, Dr. O. L. Huffman of Arvonja; and secretary-treasurer, Dr. Garland Dyches of Dillwyn.

Norfolk County Medical Society.

At the annual meeting of this Society on June 5, Dr. Claiborne Willcox was installed as president for the ensuing year, and the following were elected: President-elect, Dr. Foy Vann; vice-president, Dr. Robt. DuVal Jones; and secretary-treasurer, Dr. Lockburn B. Scott, all of Norfolk. Dr. Scott was elected for the twenty-sixth consecutive year to his position as secretary-treasurer. At this meeting, delegates and alternates were also named for the State meeting in Richmond in October.

The Southwestern Virginia Medical Society

Held its semi-annual meeting at Governor Tyler Hotel, Radford, May 5. The scientific program which started at 2:00 P. M. included discussions on:

Complicated Surgery of the Abdomen by Dr. George A. Wright, Marion.

The Value of Fluids in Infants and Children by Dr. R. H. DuBose, Roanoke.

Alkalosis by Dr. E. H. Hearst, Bristol.

Preliminary Report on Cataract Extraction through Vitreous by Dr. G. M. Maxwell, Roanoke.

After the program, the visitors inspected the Radford Community Hospital, following which there was a cocktail party and banquet at the hotel. Guest speaker at the evening session was Captain

Louis E. Wice.

Dr. A. B. Graybeal of Marion is president and Dr. G. C. Williams of Pearisburg secretary of the Society.

While the doctors were having their scientific session, the ladies who accompanied them enjoyed cards in the hotel lounge.

The Wise County Medical Society

Held its Spring meeting on May 11 at the Monte Vista Hotel, Big Stone Gap, as guests of the Stonega-Appalachia and Big Stone Gap physicians. There were twenty-two members and five visitors present, and all seemed to enjoy the chilled fruit and Four Roses cocktail before the special Steak Dinner.

After a short business meeting, the following scientific program was presented: Dr. C. L. Harshbarger, Norton, spoke on "Industrial Pulmonary Conditions and Diseases", illustrating this with x-ray films. This paper was interesting from many points of view, chiefly because of the recent compensation law changes to include some industrial diseases. Dr. R. L. Phipps, Clintwood, discussed this, including in his remarks the other accidents that occur relative to the chest region. The guest speaker was Dr. E. H. Hearst, Bristol, Tenn.-Va., his subject being "Alkalosis". This provoked much discussion and it was refreshingly interesting.

A letter from the secretary of the State Society was read in which the members were urged to patronize the advertisers in the VIRGINIA MEDICAL MONTHLY.

Dr. Glen Foster, of Stonega, is president and Dr. W. B. Barton, also of Stonega, is secretary-treasurer.

News

Medical College of Virginia News.

Mr. Bernard M. Baruch has made a grant of \$250,000 for use over a ten year period in support of research and teaching in the field of physical medicine. The college is one of three centres selected for the support of this type of work. In addition, Mr. Baruch has provided funds for special grants-

in-aid and fellowships in physical medicine in other institutions.

Dr. John S. Howe, associate professor of pathology, attended the meeting of the National Tuberculosis Association in Chicago, May 9-12, presenting a paper before the medical section on *Studies on Tuberculosis Bacillemia*.

Promotions on the faculty for the biennium beginning July 1, 1944, are as follows:

- Dr. Lynn D. Abbott from associate in to assistant professor of biochemistry
- Dr. Sumter S. Arnim from assistant professor to associate professor of operative dentistry and pathology
- Dr. M. E. Berk from assistant to instructor in medicine
- Dr. W. M. Bickers from instructor to associate in gynecology
- Dr. A. J. Borowski from assistant to instructor in biostatistics
- Dr. Merton E. Carver from instructor to associate in psychology
- Dr. R. C. Cecil from assistant to associate in medicine
- Dr. Alice Davis from instructor to associate in sociology
- Dr. R. F. Eastman from associate in to assistant professor of operative dentistry
- Dr. John C. Forbes from associate professor to research professor of biochemistry
- Dr. E. T. Gatewood from associate professor to clinical professor of otology, laryngology, and rhinology
- Dr. John S. Howe from associate professor to professor of pathology
- Dr. Karl L. Kaufman from assistant professor to associate professor of pharmacognosy
- Dr. Barnet M. Levy from assistant to instructor in operative dentistry and bacteriology
- Dr. P. J. Modjeski from assistant to instructor in crown and bridge prosthesis and prosthetic dentistry
- Dr. Charles W. Morhart from assistant professor to associate professor of prosthetic dentistry
- Dr. Frank Pole from instructor to associate in urology
- Dr. Spottswood Robins from instructor to associate in gynecology
- Dr. Eric C. Schelin from assistant to instructor in obstetrics
- Dr. J. H. Scherer from assistant professor to associate professor of medicine
- Dr. E. U. Wallerstein from associate professor to professor of clinical otology, laryngology, and rhinology
- Dr. W. C. Winn from associate in to assistant professor of obstetrics

Dr. William B. Porter, professor of medicine, spoke to the staff of the Langley Field Hospital on June 13 on *Arterio-Venous Fistula*.

Dr. I. A. Bigger, professor of surgery, spoke to the staff of the Naval Hospital at Portsmouth recently. He also attended the annual meeting of the American Medical Association in Chicago, giving a paper before the surgical section on *The Treatment of Traumatic Aneurysms and Arterio-Venous Fistulae*.

On June 1 members of the faculty, the Board of Visitors, the student body, and college alumni honored Mr. J. R. McCauley, secretary-treasurer, with a celebration marking his fortieth anniversary with the institution. Members of the group gave short talks in the Simon Baruch Auditorium, presenting a book of more than four hundred letters from friends. Following this Miss Helen McCauley presented an oil portrait of her father by John Slavin to the college.

Robert Smith Hudgens, formerly assistant superintendent of Emory University Hospital, Atlanta, and administrator since 1937, has accepted the position as director of the Medical College of Virginia Hospitals, and will enter upon his duties the latter part of July. He succeeds Dr. Lewis E. Jarrett, who resigned and left the 1st of June to accept a similar position at Tuoro Infirmary, New Orleans.

Superintendent of Blue Ridge Sanatorium.

Dr. Frank B. Stafford, who has been assistant superintendent at Blue Ridge Sanatorium, Charlottesville, since its opening in 1920, has been appointed superintendent of the Sanatorium, succeeding Dr. W. E. Brown, who recently resigned because of his health. Dr. Stafford is entering upon his new duties July 1.

Hospital Opened at Norfolk.

The Hampton Roads Medical Center was opened at Norfolk on June 15. This is located at Forty-Second Street and Powhatan Avenue and will accommodate 150 patients. It is under the cooperative supervision of the United States Public Health Service and the Virginia State Health Department, and is available for the treatment of all civilian infectious venereal diseases, without regard to race, sex or age. In view of the present situation in that area, it is contemplated that this hospital will limit its activities to the Hampton Roads area until such

time as the acute emergency now existing in that section is relieved.

Dr. R. Finley Gayle,

Richmond, was elected to the Council of the American Psychiatric Association, at its centennial convention recently held in Philadelphia.

Dr. C. Howard Cain

Recently accepted a position with the Cleveland County (N. C.) Health Department, at Shelby, and is at present assistant to the Health Director of that county. Dr. Cain is a native of Petersburg, a graduate of the Medical College of Virginia in 1930, and practiced for five years at Orange, Va.

Dr. Claude M. Lee,

Late of the Clifton Springs Clinic, Clifton Springs, N. Y., has opened an office in Charlottesville.

Dr. Lee was for 36 years in China as Superintendent and Surgeon to St. Andrews Hospital. He returned to this country on the first trip of the exchange ship "Gripsholm".

Dr. Rachel Weems,

Class of '24, Medical College of Virginia, until recently physician to the State Teachers College at Harrisonburg, has gone to Leetsdale, Pa., where she is specializing in Physical Medicine under Dr. Jessie Wright of the Medical School of the University of Pittsburgh. Her headquarters are the D. T. Watson School of Physical Therapy and the Crippled Children's Hospital, but she will also work in Pittsburgh.

Dr. Kurt Hirsch,

Of the Raiford Memorial Hospital Staff, Franklin, attended Post-Graduate Clinics in Surgery at Columbia University, New York, May 1-15.

The Richmond Eye, Ear, Nose and Throat Society

Held its regular meeting at the Commonwealth Club in this city on June 6. The program consisted of an illustrated talk on "Vincent's Infection and Other Lesions of the Mouth" by Dr. M. P. Doyle and Dr. B. M. Levy, of the School of Dentistry, Medical College of Virginia; and "An Unusual Case of Foreign Body in the Eye (tolerated for sixty-two years)" by Dr. W. F. Bryce.

Married.

Dr. John O. Rydeen and Miss Olive Maria

Nadonley, both of Norfolk, March 30.

Dr. Sarah Hildah Hoover, Richmond, class of December, 1943, Medical College of Virginia, and Mr. George R. Jones, Jacksonville, Fla., June 10. Mr. Jones is a member of the Junior class of the College.

Dr. John A. Wright, Jr., and Miss Mary Catherine Campbell, both of Doswell, June 3. Dr. Wright is a graduate of the Medical College of Virginia in 1937.

West Virginia State Medical Association.

At the meeting of this Association in May, Dr. Thomas L. Harris of Parkersburg was elected president and will take office January 1. Dr. Robert J. Reed, Jr., of Wheeling continues as president until that time. Dr. Mayes B. Williams of Wheeling and Lynwood G. Houser of Beckley were named vice-presidents, effective the same date. Mr. Charles Lively is executive secretary-treasurer. It was voted to hold the 1945 session in Clarksburg, the exact dates to be set later.

Dr. Warren F. Draper,

Deputy Surgeon General, U. S. Public Health Service, former State Health Commissioner of Virginia for three years, has been assigned to the Army with the grade of Brigadier General. His duties in this position will be concerned with public health problems of occupied countries.

Post-Graduate Summer Clinic.

The second annual post-graduate summer clinic, sponsored by the Southampton County Medical Society and the Fourth District Medical Society, will be held at Franklin on July 26, with Dr. Morgan B. Raiford presiding. The program will be as follows: Advances in the Insulin Drugs by Dr. William R. Jordan, Richmond; A Review of the Penicillin-Like Molds by Dr. Harvey B. Haag, Richmond; and Tropical Diseases as Related to Our Practice, the speaker to be announced.

Dr. Andrew F. Giesen,

Until recently of Konawa, Oklahoma, where he had practiced for fourteen years, has located in Radford and is an associate in surgery at the new Radford Community Hospital.

Raiford Memorial Hospital.

The new modern fire-proof addition to this hospital at Franklin is now under way. This will give

new clinic facilities, operating room, surgery and obstetrical departments, a complete new kitchen, dining room and cafeteria, and space for a physiotherapy department. There will be complete renovation of the present building which will add space to the nurses' home and administration. The time of construction will be about six months.

Virginia Doctors in Service—Supplement 8.

Since the list published in the June MONTHLY, we have been advised of the names of several additional Virginia doctors now with the Armed Forces. These are in alphabetical order with home addresses, on account of constant changes in rank and location. The original list appeared in July, 1942.

The MONTHLY is anxious to have as complete a list as possible and would appreciate being advised of omissions that they may be included in future supplements.

VIRGINIA DOCTORS IN SERVICE

Dr. A. Wilson Brown, Pocahontas
 Dr. S. H. Catron, Marion
 Dr. J. J. Clark, Richmond
 Dr. Sam Milchin, Bishop
 Dr. Julien H. Meyer, Roanoke
 Dr. Fred M. Morrison, Lynchburg
 Dr. Leonard David Policoff, Richmond
 Dr. A. G. Schnurman, Roanoke
 Dr. Douglas B. Stratton, Roanoke
 Dr. Charles A. Young, Jr., Roanoke

Promotions in the Service.

Promotions of Virginia doctors in the Armed Forces noted recently are:

To Lieutenant Commander

Dr. J. E. Amiss, New Market

To Lieutenant Colonel

Dr. Glenn L. Walker, Roanoke

To Major

Dr. B. Randolph Allen, Suffolk

To Captain

Dr. Herbert Bryan Hutt, Alexandria

Dr. L. D. Policoff, Richmond

The International College of Surgeons

Will hold its ninth annual assembly at the Benjamin Franklin Hotel, Philadelphia, on October 3-5. The program will be devoted to War, Rehabilitation and Civilian Surgery.

This assembly, sponsored by the United States Chapter of which Thomas A. Shallow, M.D.,

F.A.C.S., F.I.C.S., of Philadelphia is President, has set up its Arrangement Committee with Dr. Rudolph Jaeger as General Chairman. Dr. Jaeger will be inducted as the incoming President of the United States Chapter at the convocation on Wednesday evening, October 4. He came to the Jefferson Medical College from Denver, Colo., where he specialized in Neurosurgery.

Eminent surgeons in Government, Military and Civilian practice have been invited to attend and present papers pertinent to surgery in their particular field of endeavor.

The Neuropsychiatric Society of Virginia

Held an interesting meeting in the Richmond Academy of Medicine Auditorium on June 8, with Dr. O. B. Darden of Richmond presiding. Dr. E. B. J. Whitmore, Jr., Assistant Physician of Central State Hospital, Petersburg, presented a paper on "Endocrinopathy as an Etiological Agent in Schizophrenia"; Dr. R. Finley Gayle of Richmond and Dr. Walter B. Quisenberry, Assistant Surgeon, U. S. Public Health Service, of the Southside Health District, gave a paper on "Syphilitic Hepatitis and General Paresis Occurring Simultaneously"; and Major D. B. Davis, M.C. (invited guest), Chief of Neuropsychiatry at the Army Air Base, Richmond, spoke on "Psychiatry in an Air Force Station Hospital". All papers were freely discussed. Following the program, there was a dinner for members and guests at the Commonwealth Club.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

American Council on Education—Teachers for our times. 1944.

Baruch, Simon—Das Wasser in der ärztlichen praxis.

Beem, Frances M.—Pen and pencil drawings.

Bell, E. S.—The new baby. 1938.

Bezold, Fr.—Textbook of otology. 1908.

Brown, J. C.—Public relief 1929-1930.

Bulletin—The American College of Radiology. 1943.

Cash, W. J.—The mind of the South. 1941.

Cattell, Jaques, ed.—American men of science, a biographical directory, 1944.

Cook, Robert C. ed.—Who's who in American Education. 1943-44.

Ergebnisse der Physiologie—1903-1908.

Faurot, Walter L.—The art of whittling. 1930.

Fiero, George W.—Review of pharmacy. 5th. 1944.

- Gesell, Arnold—Feeding behaviour of infants. 1937.
 Goodspeed, Helen C.—Care and guidance of children. 1938.
 Graves, Robert—The reader over your shoulder. 1943.
 Gregory, A.—Constructive woodwork. 1939.
 Groneman, Chris H.—Applied leathercraft.
 Groves, Ernest R.—The American woman. 1944.
 Hackh, I. W. D.—A chemical dictionary. 3rd. ed. 1944.
 Harris, F. L. G.—Food 'n fun for the invalid. 1942.
 Hussey, M. M.—Teaching for health. 1938.
 Knock, A. G.—Fine willow basketry. 1929.
 Kourenmoff, P. M.—Oriental health remedies. 1944.
 Lewin, Philip—Backache and sciatic neuritis. 1943.
 Lilienthal, D. E.—TVA, democracy on the march. 1944.
 Lisa, Jas. R. & Rosenblatt, M. B.—Bronchiectasis, pathogenesis, pathology & treatment.
 Litzenberg, J. C.—Synopsis of obstetrics. 2nd. ed. 1943.
 Lunn, Dora—Pottery in the making.
 Marx, Karl—Capital, the communist manifesto and other writings.
 Massler, Maury, & Schour, Isaac—Atlas of the mouth.
 Maternity Center Association—Public health nursing in obstetrics. Pt. IV. 1943.
 Mead, Margaret—And keep your powder dry. 1942.
 Moore, Harris W.—Chip carving. 1942.
 Orban, Balint, ed.—Oral histology and embryology. 1944.
 Orbison, K. T.—A handbook for nurses aides.
 Partridge, Bellamy—Big family. 1941.
 Pauli, Anna E.—Paper toys. 1930.
 Payne, A. F.—Art metalwork. 1929.
 Routzahn, Mary S.—Annual reports and how to improve them.
 Smithsonian Inst.—Report on the progress and condition of U. S. National museum. 1943.
 Stevenson, Marietta—Public welfare administration. 1938.
 Studies from the Rockefeller Institute for medical research. v. 125, 1944.
 Sullivan, D.—Practice of group work. 1941.
 Thacher, James—The American new dispensatory. 1821.
 Trans. of the Amer. Ophthal. Soc. 1943.
 Wager, Victor H.—Plaster casting for the student sculptor. 1943.
 Walker, W. F. & Randolph, P. H. & Carolina R.—Recording local health work.
 Walsh, James J.—History of medicine in New York. v. 1-5. 1919.
 Wexberg, Erwin—Our children in a changing world. 1937.
 Wolf, Anna W. M.—Parents' manual. 1941.
 Wright, A. E.—Researches in clinical physiology. 1943.
 Zachry, C. B.—Emotion and conduct in adolescence.

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Obituaries

Dr. Jabez Masten Harman,

Floyd, died June 3, from injuries received in an automobile accident. He was 77 years of age and graduated from the University of Louisville (Ky.) in 1891. He began the practice of medicine at Willis, Va., but soon moved to Floyd where he remained in active practice of his profession for 47 years. He was well known in Floyd, Patrick, and Franklin counties. He was a Scottish Rite Mason, a member of the Medical Society of Virginia, Floyd County coroner, and chairman of the Floyd County Board of Health.

Dr. Harman, overworked and fatigued, fell asleep at the wheel while returning from a professional call and died "in the harness" on an errand of mercy. He is survived by his wife and three children, Dr. Chris Harman, USA, stationed in Texas; Dr. William Harman, USA, overseas; and Mrs. Dorothy Harman Smith, a laboratory technician in the WAVES, stationed in California.

Dr. Richard Edward Albert,

Portsmouth died May 30, after a short illness. He was forty-eight years of age and received his medical degree from the University of Virginia in 1919. Dr. Albert had been a member of the Medical Society of Virginia for twenty years. His wife and a daughter survive him.

Dr. John Edward Harris,

Well known physician of Winchester, died May 30 following a heart attack, with which he was stricken while on a fishing trip. He was sixty-nine years of age and a graduate of the Medical College of Virginia in 1900. Dr. Harris had been secretary-treasurer of the Medical Society of Northern Virginia for many years and was also secretary of the Winchester Memorial Hospital. His wife, three sons and a daughter survive him. A brother is Dr. William Lett Harris of Norfolk.

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Virginia

MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

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*Romeo, Z. J.: Sulfur and Soap as Effective Prophylaxis Against "Chiggers" (Red Bugs) in the Army, Mil. Surgeon. 90: 437-439 (April) 1942.

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Guest Editorial

Cancer Control and the Doctor

UNTIL specific treatment directed towards the cause or causes of malignant tumors becomes available as the result of fundamental research, any decrease of deaths from cancer must depend largely upon an educational program. Knowledge about the nature of the disease, the clinical course and the available therapeutic resources, admittedly incomplete but growing yearly, is available to the medical profession. The dissemination of a careful selection of these facts among non-medical people has been, for about thirty years, the object of the American Society for the Control of Cancer, now the American Cancer Society, Inc. In Virginia it is now the function of the Virginia Cancer Foundation. The lay population is being taught ever more widely those symptoms that should send a man or woman to a doctor for diagnosis and it is learning in increasing degree the significance of the biopsy and the possibilities of therapy. Although some physicians have criticized this program on the grounds of creating cancer-phobia, those who are closest to it feel that this risk is much less than the risk of ignorance about the disease. Those individuals who will develop unwarranted fear of cancer live in fear of many other of the hazards of living. In spite of some professional opposition the program of lay education has been gratefully received by the population in general. The people of our communities are in fact becoming more and more informed about the disease. Are the doctors meeting the challenge?

That this is not a rhetorical question is obvious to those physicians who deal with malignant disease daily. A proportion of the profession is not alert to cancer or is inadequately informed about it. An instance or so to illustrate this statement may not be out of place. A recent experience concerns a woman who had been taught that a lump in the breast should be investigated. She went to a physician who told her that there was nothing to worry about. He not only failed to meet her intelligent approach seriously but offended her by creating the impression that he felt his patient to be a silly, worried woman. She has since been operated upon for cancer of the breast. Another example is that of a maid in a doctor's home who showed the physician a lump in the breast. He told her not to be concerned about it. A year later she came to a tumor clinic with an advanced inoperable cancer. Within a period of two or three months two patients were seen with cancer of the rectum within easy reach of the examining finger who had actually undergone operations for hemorrhoids not more than a month previously. These may sound like extreme instances. As a matter of fact they are only examples of many such inexcusable blunders.

The situation is not limited to Virginia. In a series of 158 consecutive cancer cases seen in the New Haven Hospital and Tumor Clinic, delay in treatment was due to the physician, at least in part, in 45.2 per cent of cases. Haines and his coworkers (*J.A.M.A.*, Jan. 30, 1943) in reporting these figures state: "The delay by the physician usually was due to poor advice or incorrect diagnosis as a result of failure to carry out the indicated diagnostic procedures." In Nassau County, New York, a lay educational program was initiated in 1928 under the supervision of the County Medical Society. Neff (*New York State Journal of Medicine*, Mar. 1, 1944) has described the

resulting experience. "The first activities of the Committee were the typical ones of preparing educational articles for the local newspapers and sending speakers to address meetings of local organizations of men and women. Almost at once we were met with the embarrassing situation of having patients consult physicians because of symptoms which might mean cancer, only to have the doctors advise them to 'go home and forget it' or 'come back in six months if it doesn't go away.' We thereupon determined that it was of no value to advertise to the public the possibility of cancer cure until more of the medical profession could be gotten into a frame of mind in which they would be willing to meet the patient at least halfway."

It is obvious that a query as to the profession's place in cancer education is not an idle one. Indifference to and ignorance about the disease are deplorable, but not hard to understand. Cancer is an unusual disease in the daily run of cases seen by the family doctor in comparison with the large number of conditions without fatal potentialities. He does not want to be an alarmist; he knows that reassurance is one of his most potent drugs. There need be small wonder, then, that the error of unwarranted reassurance is so often seen. Furthermore, the physician may never have been adequately taught cancer or in the rush of a busy general practice have forgotten most of what he once knew. These are reasons but not excuses. If a physician undertakes the responsibility of the care of the people who trust him, he owes them enough knowledge about cancer and sufficient alertness to its manifestations to realize when reassurance is a breach of faith. We are not discussing errors in diagnosis, to which even the most learned and careful are subject. We are discussing unwarranted ignorance and carelessness, which are equally dangerous. Why should any doctor treat a rectal complaint without a digital and proctoscopic examination? Or abdominal pain without an abdominal examination? Or anemia without an adequate search for a possible malignant cause? These are obviously not common practice, or the medical profession would not stand where it stands today; but they and many similar instances occur.

As the campaign of lay education becomes increasingly effective, the doctor's alertness must become intensified. Even now patients are losing faith in physicians who have failed to recognize the early symptoms and signs of cancer. Lay education must be supplemented by education of a certain portion of the profession; and the informed doctor must play an increasing part in the instruction of his clientele.

This need has been recognized by the Medical Society of Virginia through its Cancer Committee and its Committee for Clinical and Medical Education. The former has established standards for the conduct of tumor clinics and is considering other educational projects. The latter is studying plans to offer after the war a post-graduate course on cancer to all physicians in the state. A portion of the necessary funds is available and the remainder is in the offing. This course will be patterned on the courses previously given in obstetrics and pediatrics. The aim of the educational program for physicians is to diminish the delay between the first visit of a cancer patient to a doctor and the initiation of intelligent and properly designed therapy. The profession of Virginia is facing a growing incidence of cancer. The doctor must not be the one who is responsible for a fatal period of delay in treating the disease. There can be no indifference to the disease that ranks as the second largest cause of death.

EDWIN P. LEHMAN, M.D.,

Charlottesville, Virginia.

EDITOR'S NOTE.—Dr. Lehman is Professor of Surgery at the University of Virginia and Director of the McIntire Tumor Clinic at the University Hospital. He is Vice-President of the American Cancer Society (formerly American Association for Control of Cancer), Director of the Virginia Cancer Foundation, and Chairman of the Cancer Committee of the Medical Society of Virginia.

RICKETTSIAL DISEASES IN VIRGINIA*

HARRY H. HENDERSON, M.D.,
and
KATHARINE ATWOOD WATKES, B.A.,
State Department of Health,
Richmond, Virginia.

Rickettsia is the name given to certain small bacterial forms or bacterial like bodies appearing in the cell cytoplasm and in the intestinal tract of insects and other arthropods and are frequently associated with disease in man. It is not known

ordinary bacterial filters and as yet have been found to grow only within the cytoplasm of the living cell.

Little was known about rickettsiae until the beginning of the present century. Typhus fever, for example, has long been recognized as a clinical

RICKETTSIAL DISEASES OF MAN

GROUP	SYNONYMS	ETIOLOGICAL FACTOR	RESERVOIR	VECTOR TO MAN	FEATURES
Epidemic Typhus Fever	Ship, Jail, Hospital Famine Fever	<i>R. prowazeki</i> var. <i>prowazeki</i>	Man	Lice (<i>P. humanus</i>)	Disease of economic depravity
	Recrudescence Typhus (Brill's Disease)	<i>R. prowazeki</i> var. <i>prowazeki</i>		Not Known	Found in Eastern U. S. Port Cities
	Trench Fever (World War I)	<i>R. wolhynica</i> Syn. <i>R. quintana</i> <i>R. pediculi</i>		Lice (<i>P. humanus</i>)	Tibial ("shinbone") pain
Endemic (Murine) Typhus Fever	"New-World" (U. S.) Sporadic Typhus	<i>R. prowazeki</i> var. <i>mooseri</i>	Rat	Rat Fleas	Mild Disease
	Endemic Typhus of Moscow				
	Toulon Typhus				
Spotted Fever	Rocky Mountain Spotted Fever	<i>Dermacentroxenus rickettsi</i>	Wild Rodents	Ticks (<i>D. andersoni</i>)	Rash on wrists, ankles and forehead first
	Eastern U. S. Spotted Fever	<i>Dermacentroxenus rickettsi</i>	Dog (?)	Ticks (<i>D. variabilis</i>)	
	Brazilian (São Paulo) Fever	<i>R. braziliensis</i>	Not Known	Ticks (<i>A. cajennense</i>)	High (70%) Mortality
	Mediterranean (Fievre boutonneuse) Fever	<i>R. conori</i>	Dog (?)	Ticks (<i>R. sanguineus</i>)	"Boutonneuse" refers to nodule at site of tick bite
	South African Tick-Bite Fever	Not Known	Not Known	Ticks <i>A. hebraeum</i>)	Mild disease—Cape-town to Southern Rhodesia
Japanese River Fever	Tsutsuganmushi Fever	<i>R. tsutsugamushi</i> Syn. <i>R. nipponica</i> <i>R. orientalis</i>	Not Known	Mites (<i>T. akamushi</i>)	Regional lymphadenitis
	Tropical Typhus of Oceania	Not Known		Mites	Sera agglutinates OXK

Fig. 1.

whether these bacterial like forms are true bacteria or viruses. Many workers have classified them as being in a stage between. They do not pass through

entity, but the etiology of the disease remained a complete mystery. Post-mortem findings showed only changes associated with any acute infection. Bacteriologically the tissues were sterile. Finally the causative agent was classified as a filterable

*Read at the annual meeting of the Medical Society of Virginia in Roanoke, October 25-27, 1943.

virus until the work of Wolback and others in 1922 showed it to be a minute intercellular parasite which, with suitable technique, could be demonstrated in human and animal tissues. The first species was



Fig. 2.—Three brown dog ticks, two American dog ticks and an engorged American dog tick.

described in 1916 by da Rocha-Lima who named the bodies *Rickettsia prowazeki* in honor of Ricketts and Prowazekia, who died of typhus fever.

Rickettsiae appear like very small cocci, diplococci or short bacilli. They are from .3 to .5 microns long and .3 microns in breadth, though some bacillary forms may reach a length of 1.5 to 2.0 microns. Usually non-motile, they are uniformly gram negative and stain poorly with the ordinary stains used for bacteria. The coccidial forms often occur in masses and stain well with Giemsa.

Since much of the work on rickettsiae is still in the experimental stages, it is impossible to make a complete or an accurate classification of the diseases acceptable to all workers in the field. Figure 1 is a greatly simplified classification of the rickettsial diseases found in man to give you a skeleton to which can be added some of the confusing findings now appearing in the literature. It will be seen that there are at least four groups of rickettsial diseases, epidemic typhus fever, endemic or murine typhus fever, spotted fever and Japanese River fever. Since epidemic and endemic typhus fever are the same serologically and immunologically and differ only in vectors and severity of the disease, these two are often put in one group called typhus fever. The second column gives synonyms or names of other diseases which at present appear to belong in these groups. Here you will find many diseases more or less familiar to you. The third column gives the

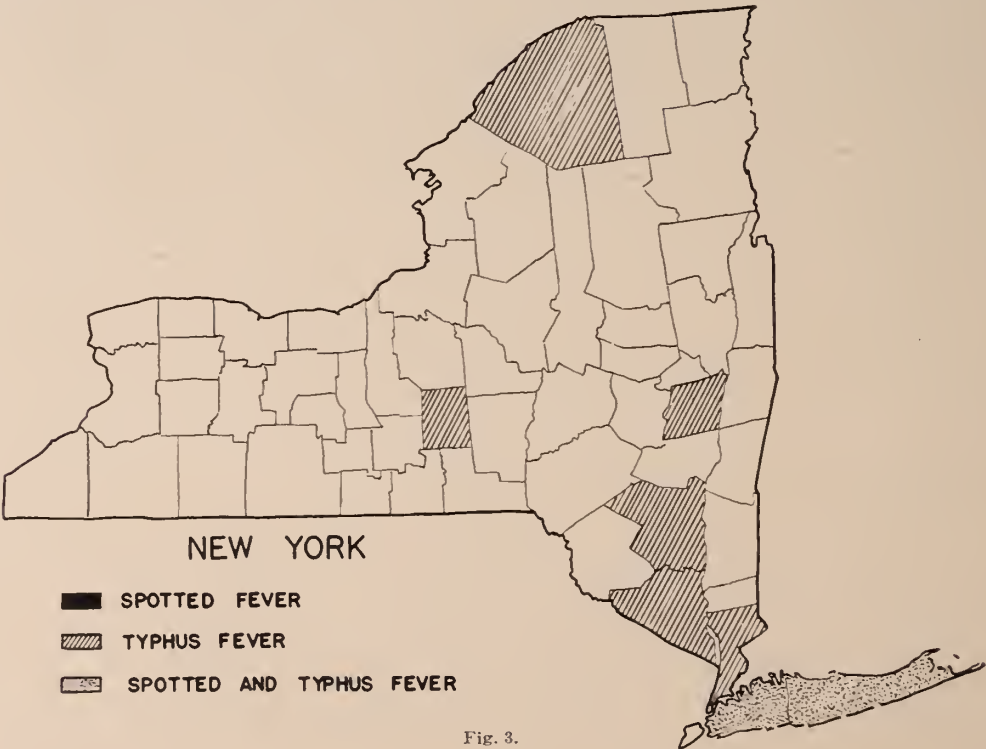


Fig. 3.

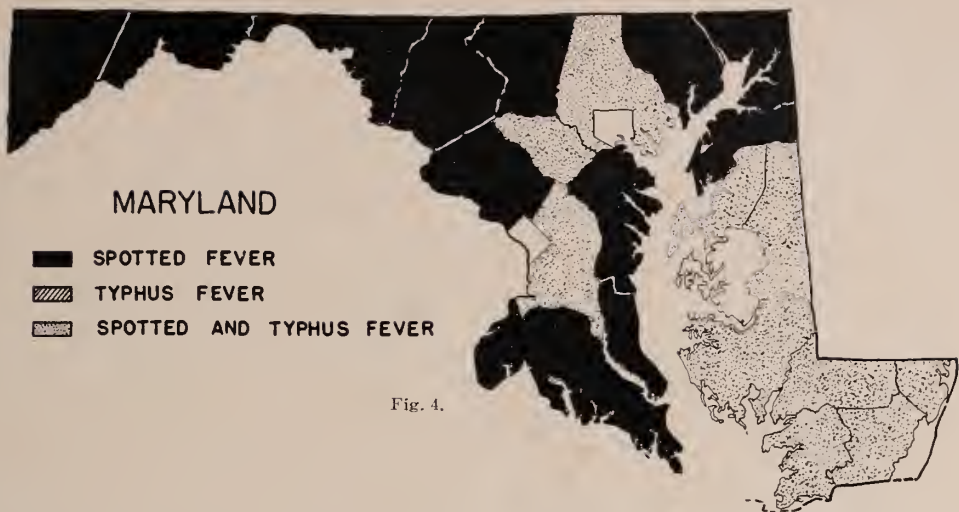


Fig. 4.

name of the organism causing the disease. Some of these have been isolated and have produced the disease in animals and some have not. The fourth column gives the host for the disease, and the fifth the vector to man. It will be noted that roughly each group has a common vector. Epidemic typhus fever is spread by body lice, endemic typhus fever by rat fleas, spotted fever by ticks and Japanese River fever by mites. The last column gives a characteristic of each disease.

To the above list of rickettsial organisms should be added Q fever found in Australia and another described by Dyer in 1938 called Nine Mile fever. Morphologically Nine Mile fever is closely related to Q fever. No cross-immunity exists between these diseases and typhus or spotted fever.

Another disease often associated with rickettsial infections is mosquito borne dengue fever found in the southern or the semi-tropical section of the

United States and in tropical countries.

While the subject matter of this paper was being compiled, Doctor Norman Topping published in the United States Public Health Reports a short article on Rickettsioses in India. There it is now known that rickettsiae causing disease entities similar to endemic typhus, epidemic typhus, Malayan scrub typhus or Japanese River fever occur.

Parker states that in many parts of the Rocky Mountain region, febrile reactions, which do not appear to be provoked by a recognized disease, are of relatively frequent occurrence following the bite of the tick *Dermacentor andersoni* and are referred to as "Colorado tick fever".

Colonel John C. Woodland and others of the Medical Corps of the United States Army have described another entity that they named Bullis fever or Lone Star fever. This is a febrile illness following the bite of the Lone Star tick of Texas and

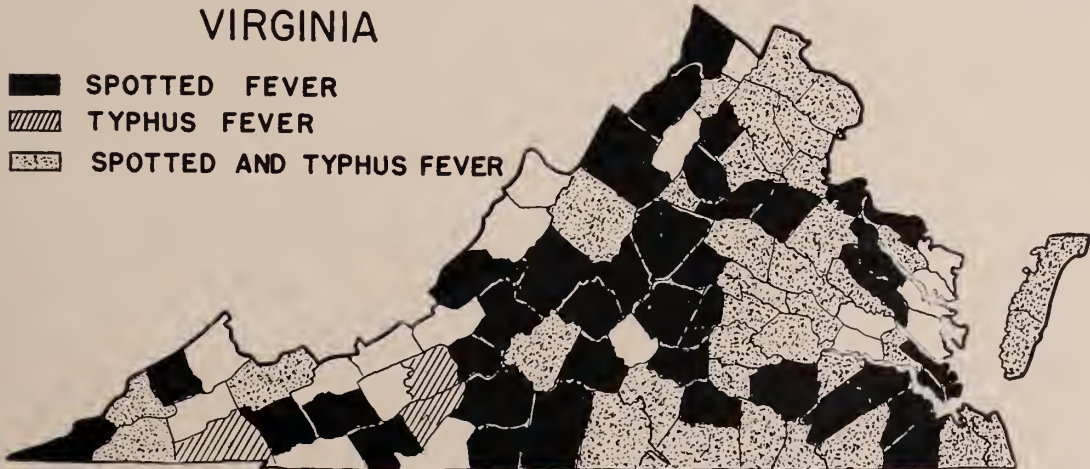


Fig. 5.

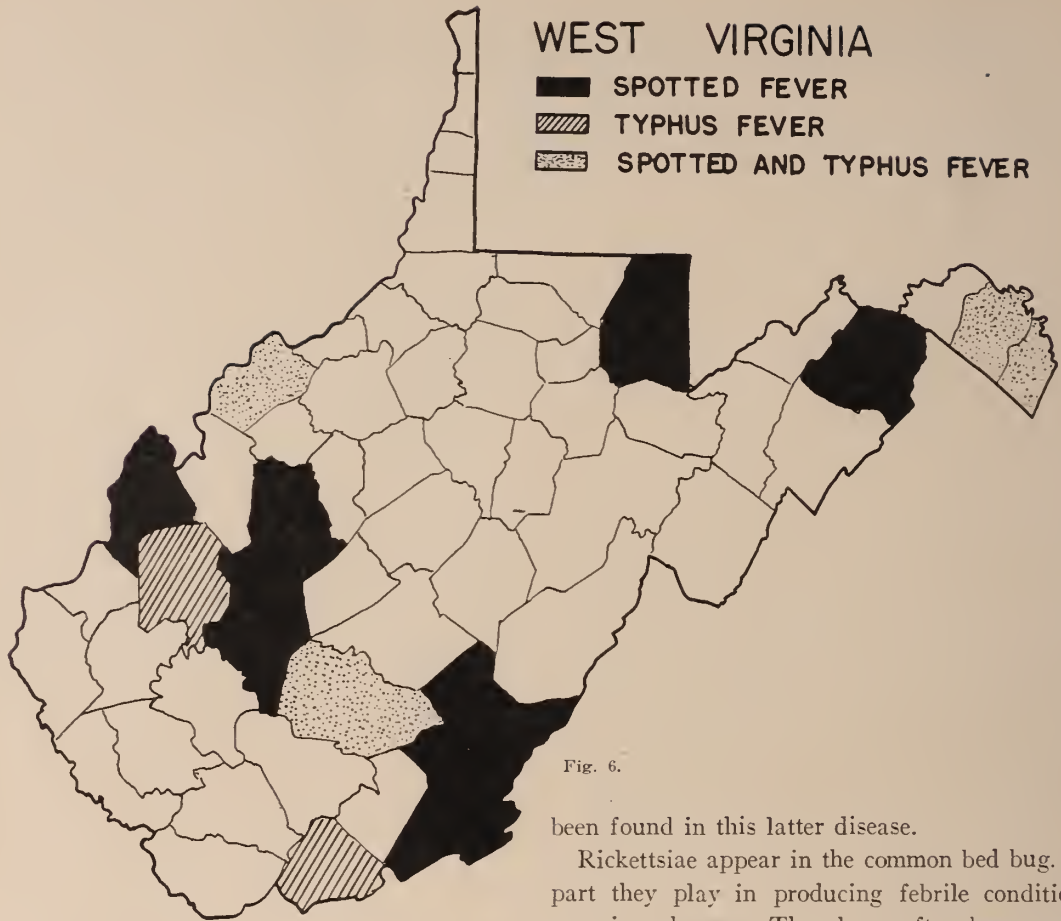


Fig. 6.

been found in this latter disease.

Rickettsiae appear in the common bed bug. What part they play in producing febrile conditions in man is unknown. They have often been suspected but never incriminated. A suitable host for culturing these rickettsia has never been found, but it is well known that many persons develop a febrile condition following bites from bed bugs. A rash is not exhibited and the over-all picture is similar to Colorado tick fever as described by Parker in 1937. Shortly prior to his death Dr. W. Brownley Foster independently made a similar observation from his work with cases in Virginia.

resembles Colorado tick fever in that there is a saddle type of temperature curve, no rash, and negative serologic findings. No etiological agent has

TENNESSEE

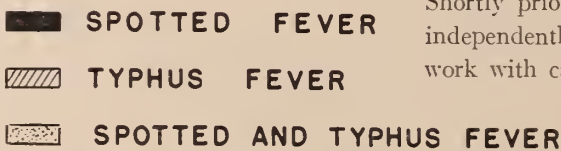


Fig. 7.

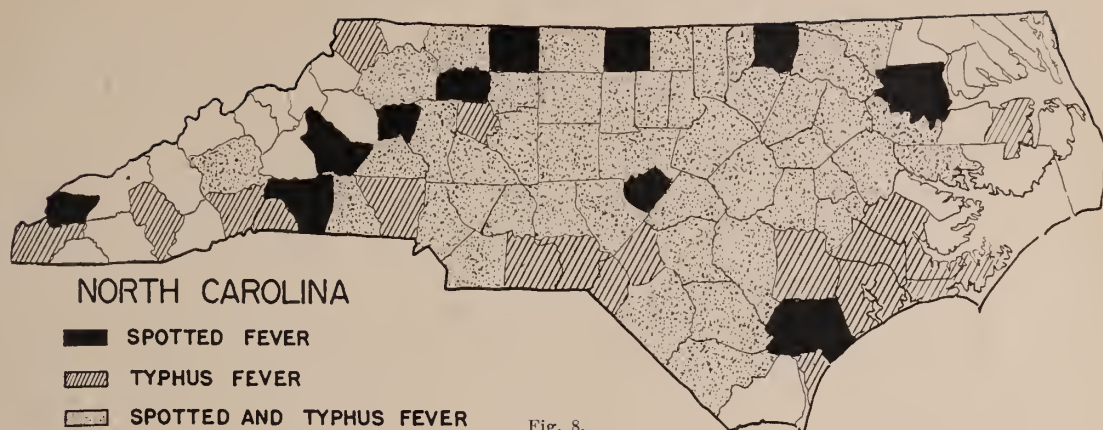


Fig. 8.

Besides these rickettsiae which have been found to be pathogenic, many other species of rickettsia are known which are apparently non-pathogenic. They have been found both in blood sucking and in non-blood sucking insects and inhabit not only the cytoplasm of the living cell but the alimentary tract of the insect itself. Whether rickettsiae are simple commensals of insects or pathogens is not clear.

It can be seen that the human diseases caused by rickettsiae are of world wide distribution. Wherever man, rodents and ectoparasites common to both exist rickettsial diseases will be found. Actually many rickettsial diseases may exist in the same region. They may be recognized or obscure and

their existence and characteristics depend on the ectoparasites present in the region. The problem presented by these exotic diseases is fascinating and their ramifications extend far beyond most infectious diseases.

In this paper we will be concerned chiefly with endemic typhus fever and Rocky Mountain spotted fever, the two rickettsial diseases found commonly in Virginia.

At the beginning of this century it was thought that typhus fever had disappeared from the United States and that the cases observed were imported from abroad or from Latin America. In 1910, Dr. Nathan Brill of New York observed a typhus-like infectious disease which he was not willing to call typhus fever. He believed he was dealing with a new disease entity of unknown etiology which was later called Brill's disease. However, in 1912, Anderson and Goldberger successfully inoculated a macacus rhesus monkey with blood from a patient

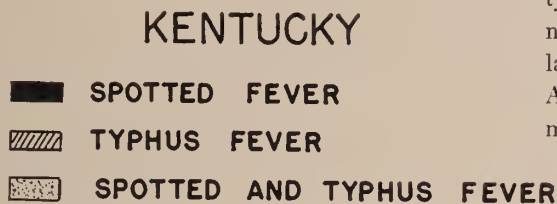


Fig. 9.

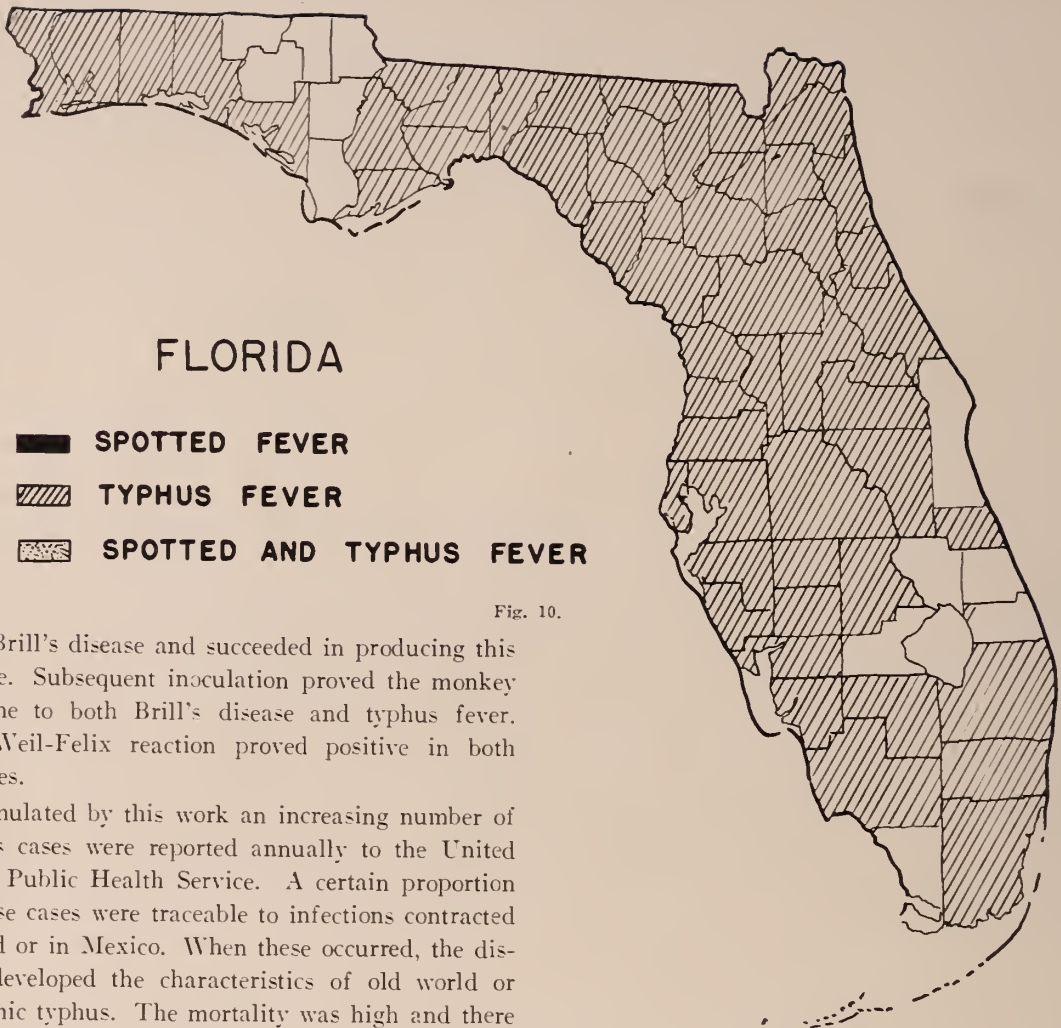


Fig. 10.

with Brill's disease and succeeded in producing this disease. Subsequent inoculation proved the monkey immune to both Brill's disease and typhus fever. The Weil-Felix reaction proved positive in both diseases.

Stimulated by this work an increasing number of typhus cases were reported annually to the United States Public Health Service. A certain proportion of these cases were traceable to infections contracted abroad or in Mexico. When these occurred, the disease developed the characteristics of old world or epidemic typhus. The mortality was high and there was almost always the history of association with louse infested individuals or louse infestation of the patient himself. Most of the cases, however, were the mild type of Brill's disease or endemic typhus, which occur sporadically throughout the Atlantic Seaboard states. In these cases it was rare to obtain a history of louse infestation but they did give a history of contact with rat fleas.

Prior to 1930, Rocky Mountain spotted fever was believed to be found only in the northwest portion of the United States. Its presence there was noted in the literature by E. E. Maxey in 1899. There was one exception, a case which occurred in Indiana in 1925. No other case had been recognized east of a line drawn north and south through the middle of the Dakotas. In 1930, in Maryland and Virginia, Rumerick differentiated spotted fever from endemic typhus fever or Brill's disease clinically and epidemiologically. This observation was con-

firmed by the laboratory work of Badger. This disease has now been reported in over 30 of the 48 states, in Canada, and in South America, where Sao Paulo Fever is found to be identical with Rocky Mountain spotted fever.

In recent years the rat flea has been found responsible for the spread of endemic typhus or Brill's disease. This disease reaches man from infected rats through the insect vector. Zinsser believed that this infection, an imported and modified form of epidemic typhus, could also be distributed from man to man by the louse.

Three ticks are known to be responsible for the transmission of the virus of Rocky Mountain spotted fever within the United States; the Rocky Mountain wood tick, the American dog tick and the rabbit tick. The first is limited to the West Coast and Canada. The dog tick is widely distributed throughout the Central and Eastern states. The rabbit tick

VIRGINIA
TYPHUS FEVER
GEOGRAPHIC DISTRIBUTION
1931 - 1942

Rocky Mountain spotted fever is maintained in nature has not been definitely determined. Some believe that the infection is acquired by the tick

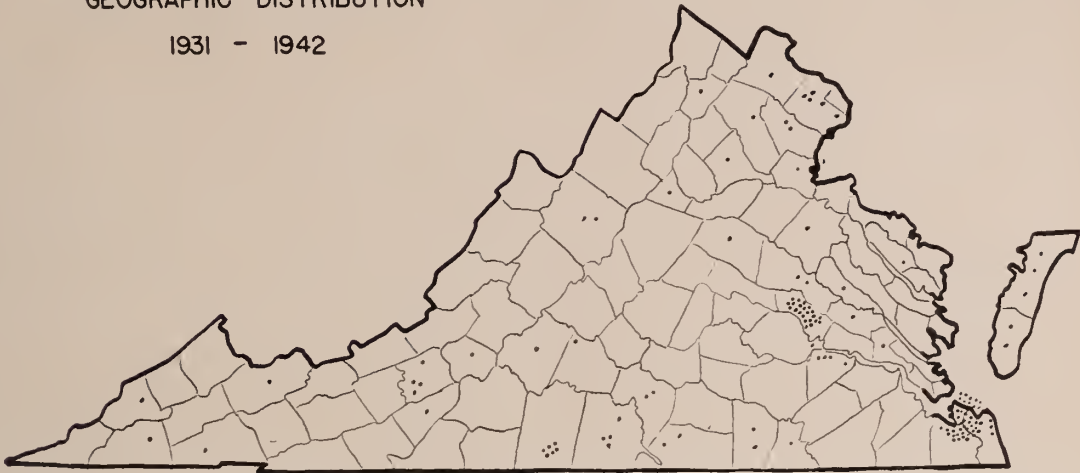


Fig. 11.

is most widely distributed of all, being found from Alaska through the states into South America.

Figure 2 shows the male and female American dog tick which is the insect vector for Rocky Mountain spotted fever in Virginia. Beside them is an engorged dog tick to give you an idea of the relative increase in size after feeding. The smaller ticks are the brown dog ticks found in Virginia in recent years and brought in from Florida. This is the tick which is becoming the household pest.

The actual mechanism by which the virus of

larvae or nymphs and passed along to the adult stage. From the infected female it is passed on to the larvae of the next generation or the infected male tick transfers the infection to the female during impregnation. Another theory is that, when the nymphal or adult ticks feed upon susceptible animals, the animal becomes infected. Non-infected ticks, which engorge upon these animals during their period of infection, become infected. They in turn infect other ticks through breeding. It was formerly thought that only larvae become infected

VIRGINIA
ROCKY MOUNTAIN SPOTTED FEVER
GEOGRAPHIC DISTRIBUTION
1931 - 1942

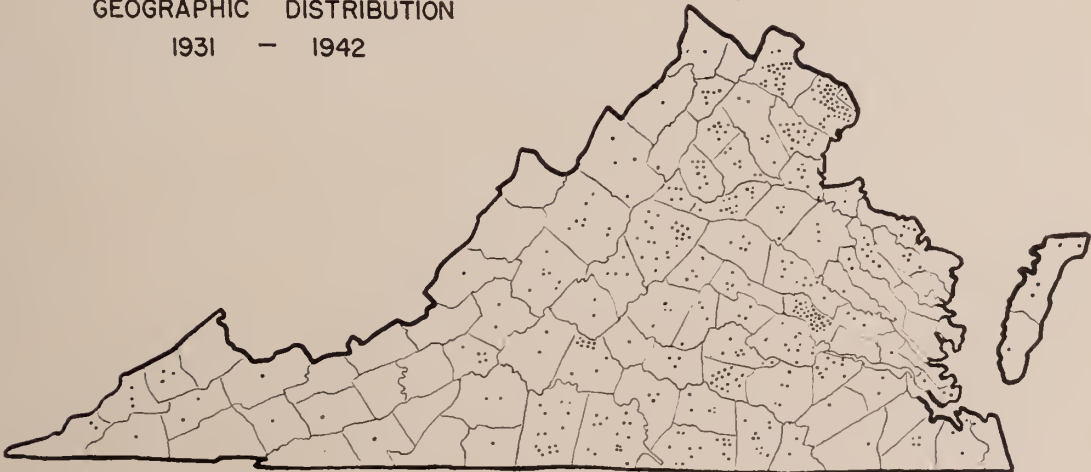


Fig. 12.

SEASONAL DISTRIBUTION
ROCKY MOUNTAIN SPOTTED FEVER

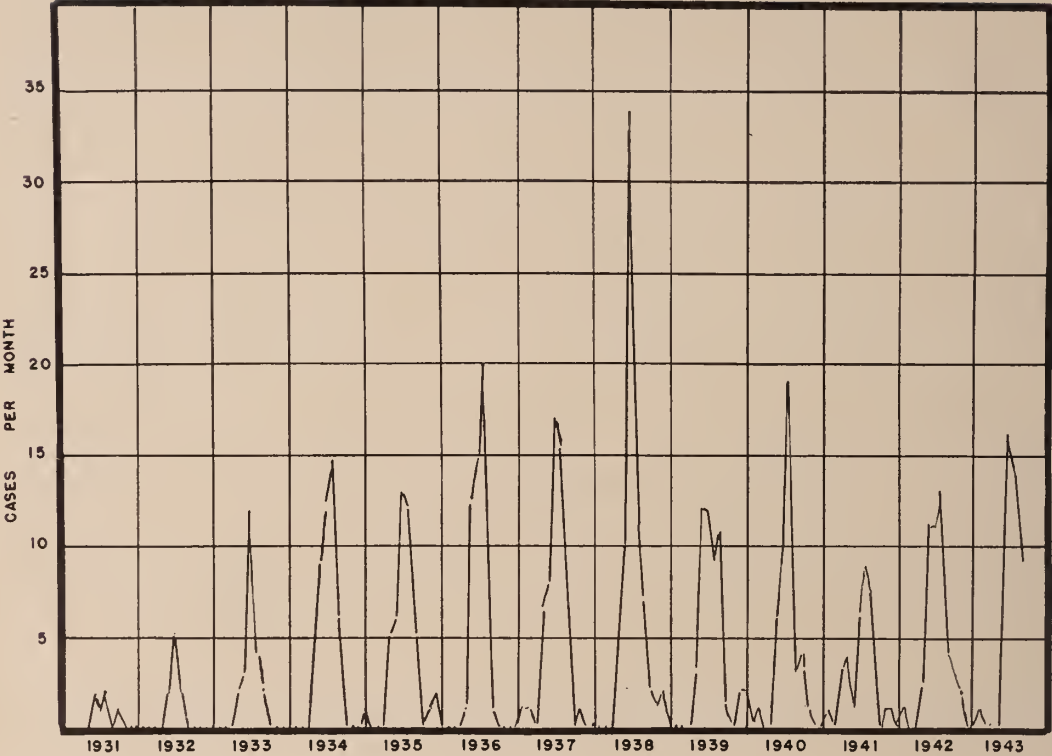


Fig. 13.

SEASONAL DISTRIBUTION
TYPHUS

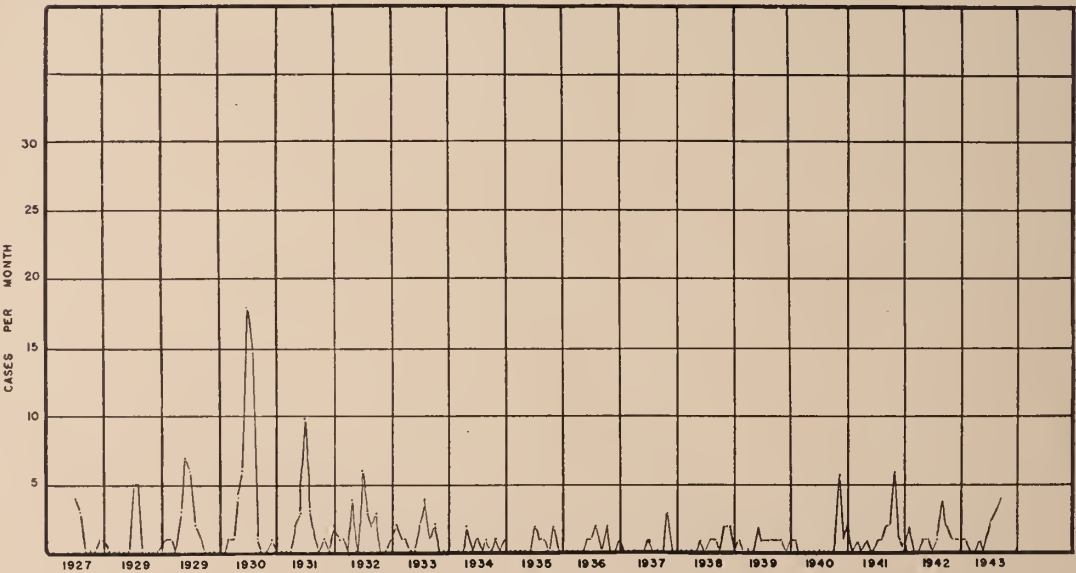


Fig. 14.

DIFFERENTIATION OF ENDEMIC TYPHUS FEVER AND ROCKY MOUNTAIN SPOTTED FEVER

Endemic Typhus

1. Year round.
2. Urban.
3. Transmitted by rat fleas.
4. Incubation period—5-20 days.
5. Mild disease.
6. Temperature lasts 14-16 days.
7. Rash first on body—spreads to extremities—spares face, palms and soles.
8. Spleen not enlarged.
9. Case fatality less than 1%.
10. W. B. C. normal or leukopenia.
11. Agglutinates proteus X19 in high titres.

Rocky Mountain Spotted Fever

1. Summer and fall.
2. Rural.
3. Transmitted by ticks.
4. Incubation period—3-10 days.
5. Severe disease.
6. Temperature lasts 21 days.
7. Rash on extremities first—spreads to body—abundant on ankles, wrists, legs, face, palms, soles, etc.
8. Spleen often enlarged and tender.
9. Case fatality 25%.
10. Leukocytosis.
11. Agglutinates proteus X19 in low titres.

Fig. 15.



Fig. 16.

Rocky Mountain Spotted Fever in a woman fifty-one years old who recovered. Photograph taken on eighteenth day of illness. (Photograph, courtesy of Dr. Caroline McGill, Butte, and Dr. R. R. Parker, Hamilton, Montana).



Fig. 17.

Rocky Mountain Spotted Fever in a boy aged eighteen years, who expired on the fourteenth day of illness. (Photograph, courtesy of Dr. M. M. Kalez, Spokane, and Dr. R. R. Parker, Hamilton, Montana).

ROCKY MOUNTAIN SPOTTED FEVER SEASONAL DISTRIBUTION OF DAY OF ONSET

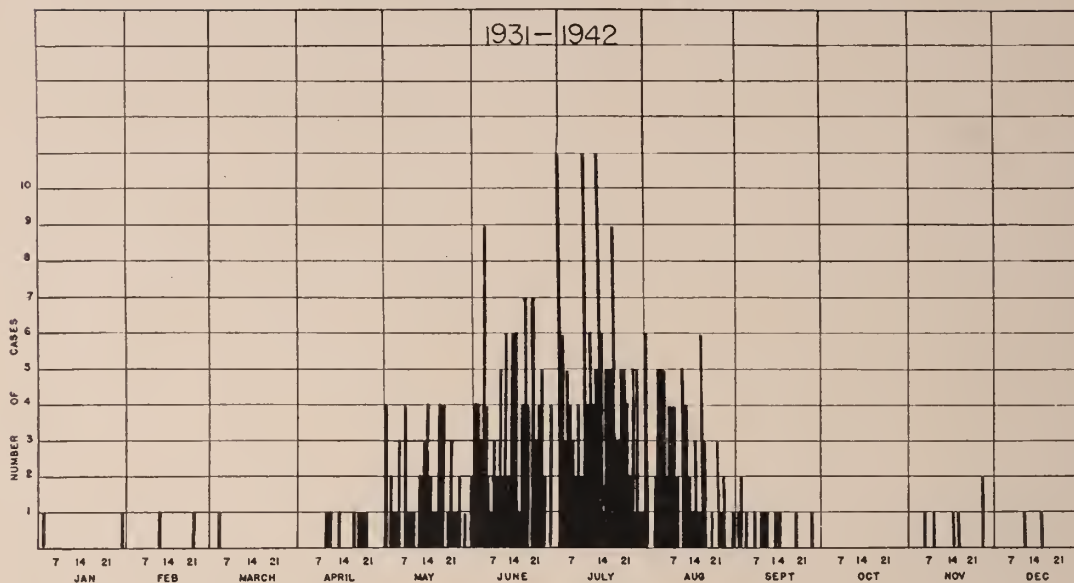


Fig. 18.

in this manner. It is now known that larger animals, such as dogs and sheep, are mildly susceptible and may prove the host for the adult non-infected male and female which usually engorge themselves on larger animals. Little has been mentioned about the role of the common rabbit tick in connection with Rocky Mountain spotted fever. This tick, with the widest geographic distribution, has had the virus of spotted fever demonstrated within it as far north as any known case of the disease in man and far beyond the distribution of the other two ticks. Therefore, it is known that the virus exists in the rabbit tick without the presence of the other two arthropods. The question arises, "can the infection in the other two arthropods exist without the infection in the rabbit tick?"

Many workers have compiled figures as to the incidence of infection in ticks. The work of Parker seems most reliable. He states that the percentage of ticks that carry the infectious virus is frequently less than 1 per cent and rarely exceeds 5 per cent. However, in small localized areas it may reach as high as 11 per cent. Local tick populations, infectious one year, may fail to show infection the following year. The reason for this is unknown. Though as a rule less than one in 100 ticks are infectious, as many as 50 per cent of the eggs from a single infected female may prove to be infectious. The level of virulence remains reasonably constant

from year to year. In the fasting tick, the tick that usually is encountered in the Spring, the virus is usually inactive or of the type that causes the atypical cases seen early in the year. Should the same tick be incubated or allowed to engorge itself with blood, the virus becomes reactivated and soon reaches its greatest potential danger.

Before considering the differential diagnosis of Rocky Mountain spotted fever and typhus fever and the characteristics of the disease as reported by the physicians of Virginia, let us look at the distribution of these two diseases along the Atlantic Seaboard. I have prepared a series of eight maps (figures 3-10) which show the counties in eight of the Atlantic Seaboard States which have had one or more cases of Rocky Mountain spotted fever or typhus fever between 1931, the first year the diseases were differentiated, and the present. Cross-hatched counties have had only typhus fever, solid black counties only Rocky Mountain spotted fever and stippled counties both diseases. You will note that the only cases of Rocky Mountain spotted fever reported in New York State were on Long Island. Why this is true, I do not know. In Maryland typhus is found chiefly around Chesapeake Bay, where you would expect it to be associated with the rats on the wharves. In Virginia the same thing is true. A large percentage of the typhus cases are in the shipping centers. In West Virginia, Tennessee, and North Carolina, both

TYPHUS FEVER SEASONAL DISTRIBUTION OF DAY OF ONSET

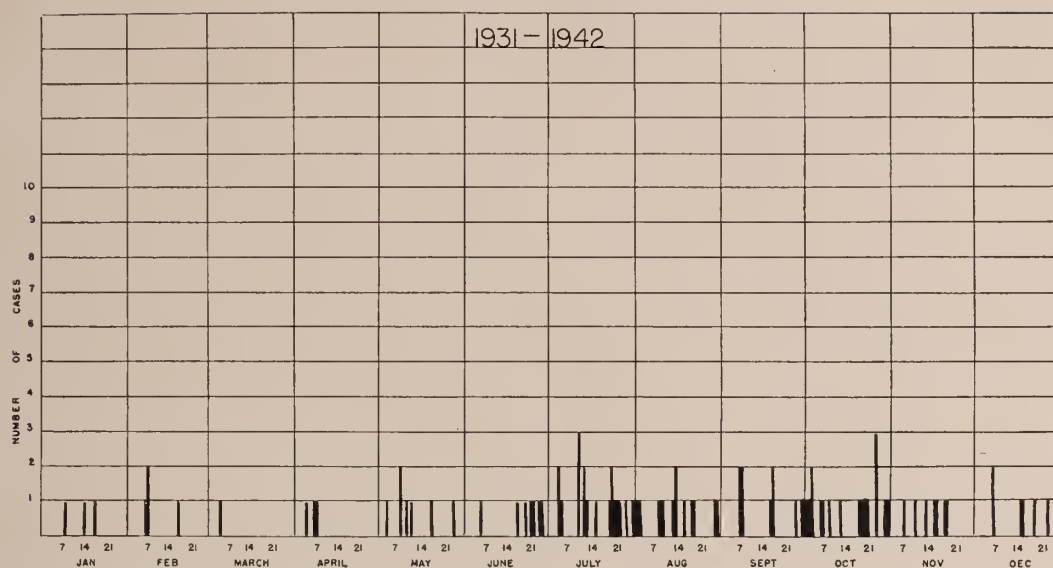


Fig. 19.

diseases are scattered pretty well all over the states in no particular pattern. It is curious to note that Kentucky has no reported cases of typhus fever, although we have just shown that West Virginia on the north, Tennessee on the south and North Carolina and Virginia to the east, do have typhus fever. This leads one to think that possibly typhus fever in Kentucky has been misdiagnosed. In Florida there have been no recognized cases of Rocky Mountain spotted fever, only typhus fever. In general it can be said that Rocky Mountain spotted fever is found in the northern half of the Atlantic Seaboard and typhus fever primarily in the southern half. Virginia and its neighboring states are in the region where both diseases are quite prevalent.

Let us look at another map of Virginia (figure 11), on which the reported cases of typhus fever have been spotted. You will note again that most of the cases were around Norfolk and Richmond. It is because of its association with wharves, ships, large packing houses and the like, that typhus has sometimes been called an urban disease, jail fever or ship fever.

The reported cases of Rocky Mountain spotted fever (figure 12) are scattered pretty well all over the State, although the majority are east of the mountains.

Before going into the differentiation between these diseases, let us look at the distribution of these cases over a period of years. After Rocky Mountain spotted fever was differentiated from typhus fever in 1931, it increased each year till in 1938 there were 72 cases. Since then there have been between 30 and 50 cases reported each year. Figure 13 shows the reported cases plotted by months with the summer months being the peak months. Back in 1927 through 1931 or 1932, when Rocky Mountain spotted fever was not differentiated from typhus fever, typhus appeared to be more prevalent than in recent years (figure 14). Now, of course, we know that probably most of those cases were Rocky Mountain spotted fever. After 1933 there is no peak month for the cases.

The differential diagnosis of rickettsial diseases is often very difficult, because both diseases encountered in the eastern part of the United States are similar in a great many of their characteristics. Rocky Mountain spotted fever and typhus fever are both transmitted to man by the bite of an insect and both of these vectors are found in the mild climate of the Atlantic Coastal States. In neither disease does a lesion develop at the site of the insect bite. Both diseases are acute at their onset and when the disease runs its typical course the duration is often from two to three weeks. There is a similar

AGE DISTRIBUTION OF
ROCKY MOUNTAIN SPOTTED FEVER CASES

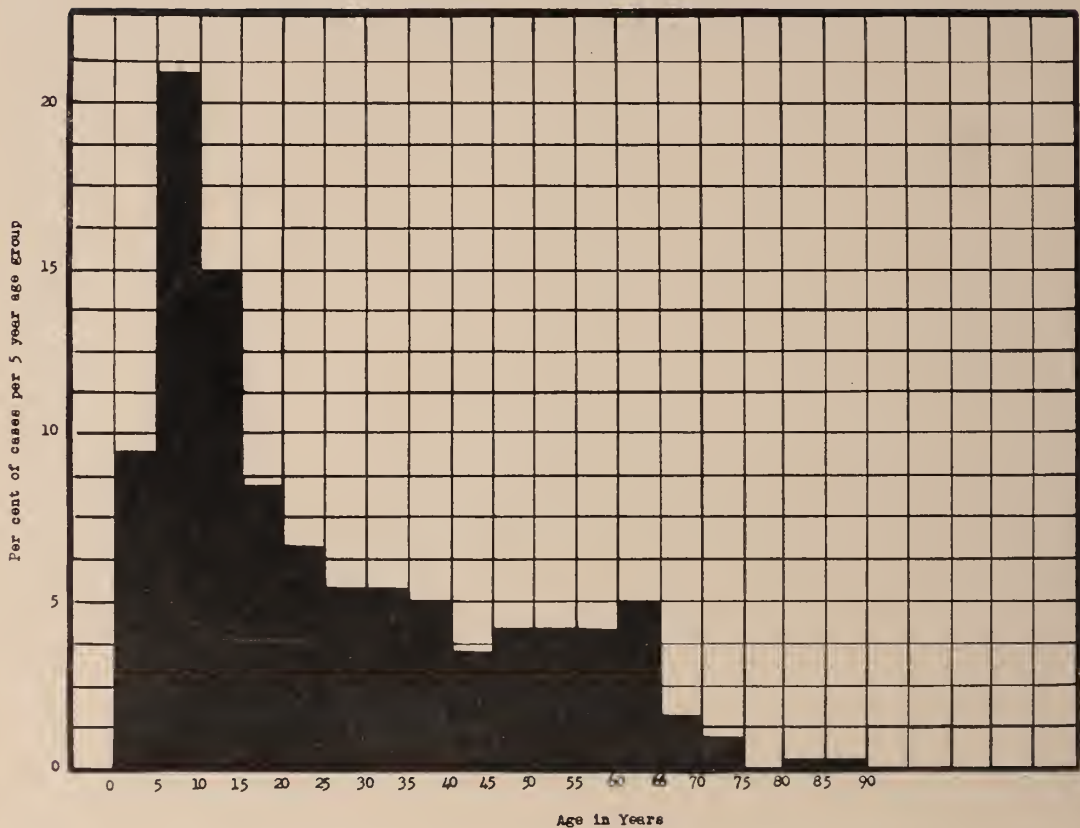


Fig. 20.

history of headache, severe general aching, pains in the muscles and joints, photophobia and fever. Very often when a patient is first examined, the rash is generalized and appears on about the fifth day of the disease. It is red maculo-papular and the lesions are three to four millimeters in diameter and typical flea-bite in appearance. Nervous and mental symptoms are common in both diseases and these symptoms along with the rash indicate the pathology present. Both disease entities agglutinate a proteus organism.

When the two diseases can be separated and studied, variations in their similarity will be noted. Figure 15 shows some of these differences in tabular form. Typhus fever occurs sporadically throughout the year, while spotted fever is limited to the summer months. As one would expect from the vector, typhus fever is primarily an urban disease and spotted fever is predominantly a rural one or has been contracted rurally. Typhus fever is found in all age groups while spotted fever is a disease of

young people. Typhus fever is a much milder disease than Rocky Mountain spotted fever. Consequently, the central nervous system symptoms are more marked and permanent damage and sequellae are encountered more frequently in Rocky Mountain spotted fever. The fever lasts longer and the death rate is very much higher. Headache, photophobia and backache have been reported as more severe in Rocky Mountain spotted fever.

The rash in typhus occurs on or about the 7th day of the disease or several days later than the rash seen in spotted fever. The rash in typhus fever appears on the body first and spreads distally, sparing the face, palms and soles while that in spotted fever appears first on the extremities and spreads to the body. With the more severe disease of spotted fever the rash frequently becomes hemorrhagic and necrosis of the scrotum and soft palate occur. A leucocytosis is to be expected. These findings are seldom present in typhus. The spleen is enlarged often in spotted fever but normal in size or not pal-

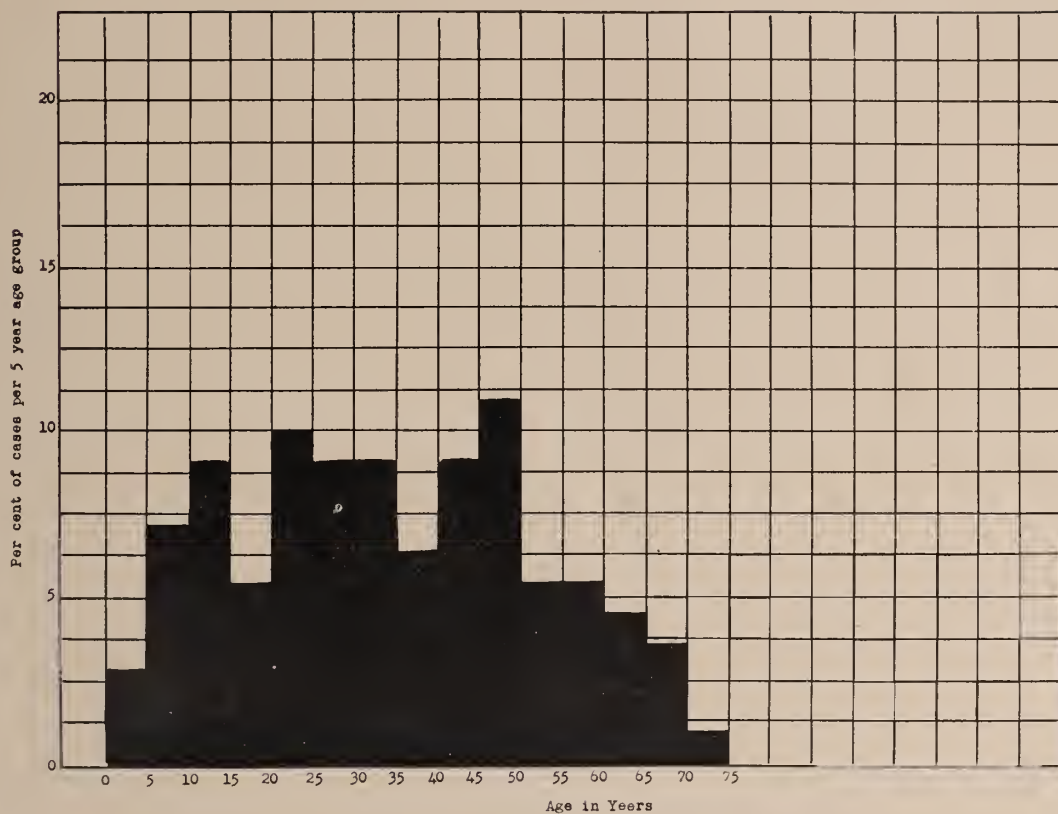
AGE DISTRIBUTION
TYPHUS FEVER CASES

Fig. 21.

pable in typhus. Typhus fever agglutinates the proteus OX19 organism in higher dilutions and earlier than spotted fever does.

Through the courtesy of Dr. R. R. Parker, Director of the Hamilton, Montana, Laboratory, the pictures of clinical cases of Rocky Mountain spotted fever were made available. Figure 16 shows the arms, hands and legs of a woman covered with the typical Rocky Mountain spotted fever rash. Hemorrhagic areas can be noted on the lateral aspect of the left thigh. Figure 17 shows pictures of a boy with Rocky Mountain spotted fever taken a few hours before his death. Note the rash on the palms of his hands, soles of his feet and even his face, and the gangrenous spots on his knees and ankles. We are sorry that we are unable to reproduce in print the excellent colored photographs taken on Virginia patients through the courtesy of their physicians.

The great variation in the clinical picture of these diseases adds to the difficulty in diagnosis. These

variations not only are influenced by the individual patient but depend upon the virulence of the virus. Mild atypical cases of rickettsial diseases are frequently encountered in Virginia and they may be so unlike the typical severe cases that they may simulate a different disease.

Malignant and fulminating cases may be confused with typhoid, smallpox, purpura haemorrhagica and severe cases of measles. Proteus cross-agglutination may cause tularemia and undulant fever to be confused with the rickettsiae. This past year the particularly malignant variety of epidemic meningococcal meningitis has been confused with both Rocky Mountain spotted fever and typhus fever. Many of these cases exhibited a rash, mental symptoms and a degree of illness frequently seen in rickettsial infections.

In addition to these factors there may be biologic variation due to a different arthropod, strain of arthropods, or to a different mammalian host. The differences between endemic murine typhus and epi-

DAY OF ERUPTION COMPARED TO DAY OF ONSET IN
ROCKY MOUNTAIN SPOTTED FEVER AND TYPHUS FEVER CASES

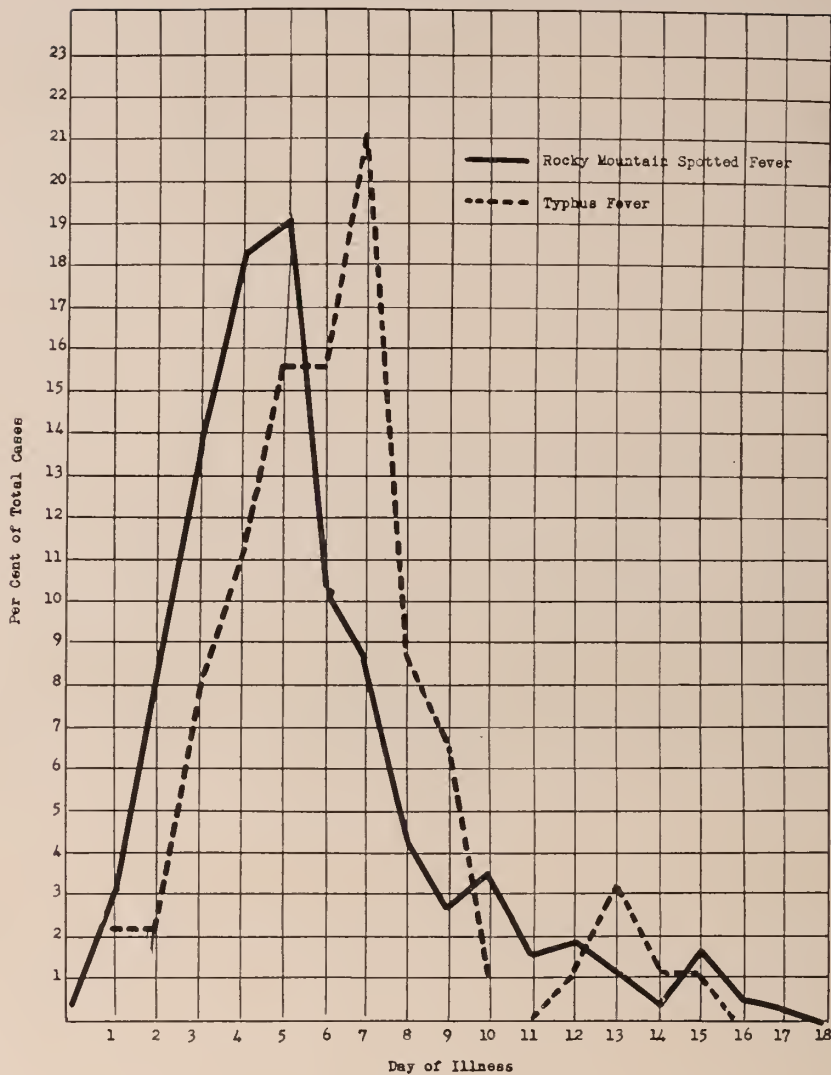


Fig. 22.

demic human typhus probably may be explained upon this basis.

Since there is so much difficulty in diagnosing typhus and Rocky Mountain spotted fever a laboratory test that was conclusive would be most welcome. None has been found as yet, so the best that can be done is to use the Weil-Felix test in conjunction with clinical findings. The Weil-Felix test is an agglutination test with proteus organisms. Just what the relation is between the rickettsial organisms and the proteus organisms is not known. The proteus organisms do not cause the rickettsial diseases. They have been isolated from rickettsial diseases in many instances, but many more times from numerous other

diseases. No one has been able to change from rickettsia to proteus in culture or insect. However, for some unknown reason, the rickettsial organisms agglutinate the proteus. In Virginia agglutination is against O strains of *Proteus* X19 and *Proteus* X2. In other localities, the Kingsbury strain is used, but because of cross-agglutination it is not specific. Parker states that an agglutination titre of 1:320 is the lowest that can be considered diagnostic and that 1:160 is highly suggestive. Two or more specimens should be taken and it is to be expected that the first specimen will be negative. Only after the elapse of 10 days or two weeks will the increase in blood titre manifest itself in diagnostic proportions. If,

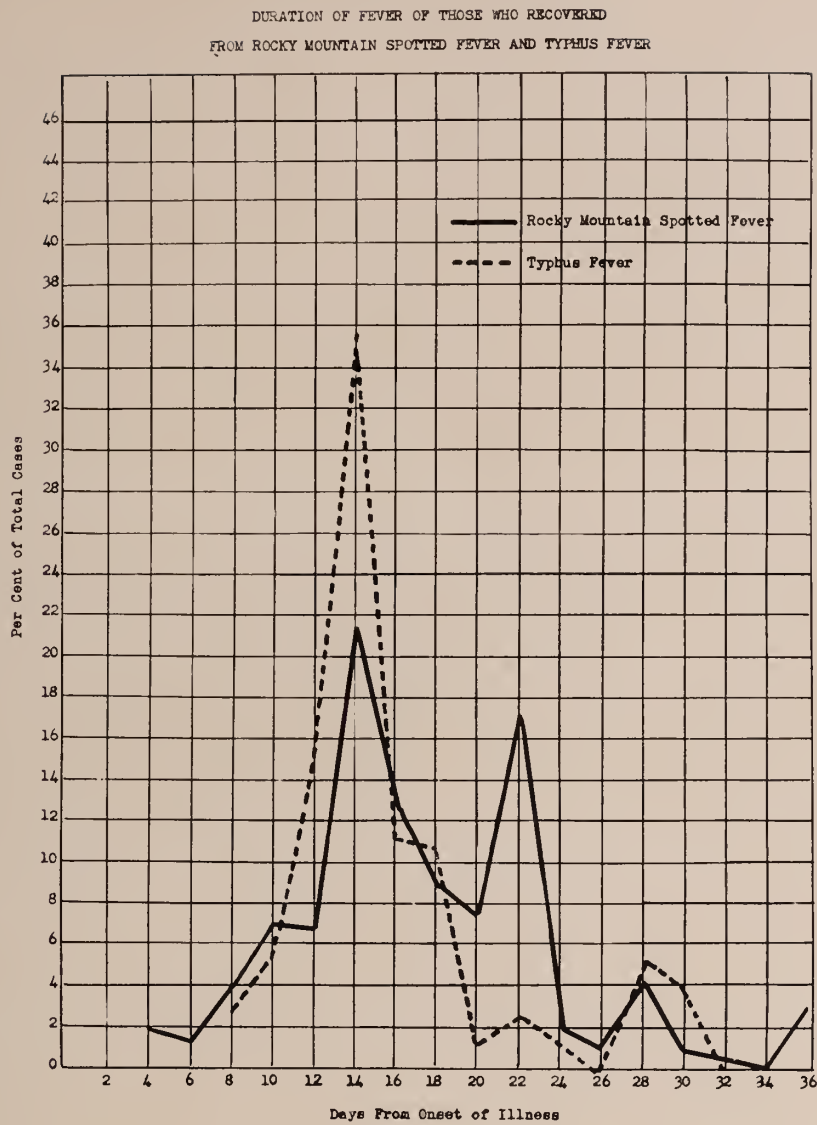


Fig. 23.

however, the first agglutination was low and the second remains low after two weeks, the possibility of an amanestic reaction brought about by the presence of another disease should be kept in mind. Since tularemia, undulant fever and other diseases also agglutinate the proteus organisms, let me emphasize that this test is meaningless except when used in conjunction with clinical findings.

Since 1927, when Brill's disease or endemic typhus first became reportable in Virginia, the physicians have been asked to fill out a questionnaire on each case they have reported. In this study we have considered only those sent in since 1931, the first year that Rocky Mountain spotted fever was

differentiated from typhus fever. From 1931 through 1942, there were 482 reported cases of spotted fever. Questionnaires were received on 435 of these. In the same period there were 133 cases of typhus fever and 109 questionnaires.

The remainder of this paper is an analysis of this data provided by the physicians of Virginia. It took a number of years to get enough cases to be significant, but I hope now they will recognize the importance of their contribution to the study of rickettsial diseases.

Figure 18 shows the distribution of the day of onset of all the Rocky Mountain spotted fever cases. With the exception of a few stray cases in the winter

TITRES OF AGGLUTINATION TESTS FOR
ROCKY MOUNTAIN SPOTTED FEVER
IN RELATION TO ONSET OF ILLNESS

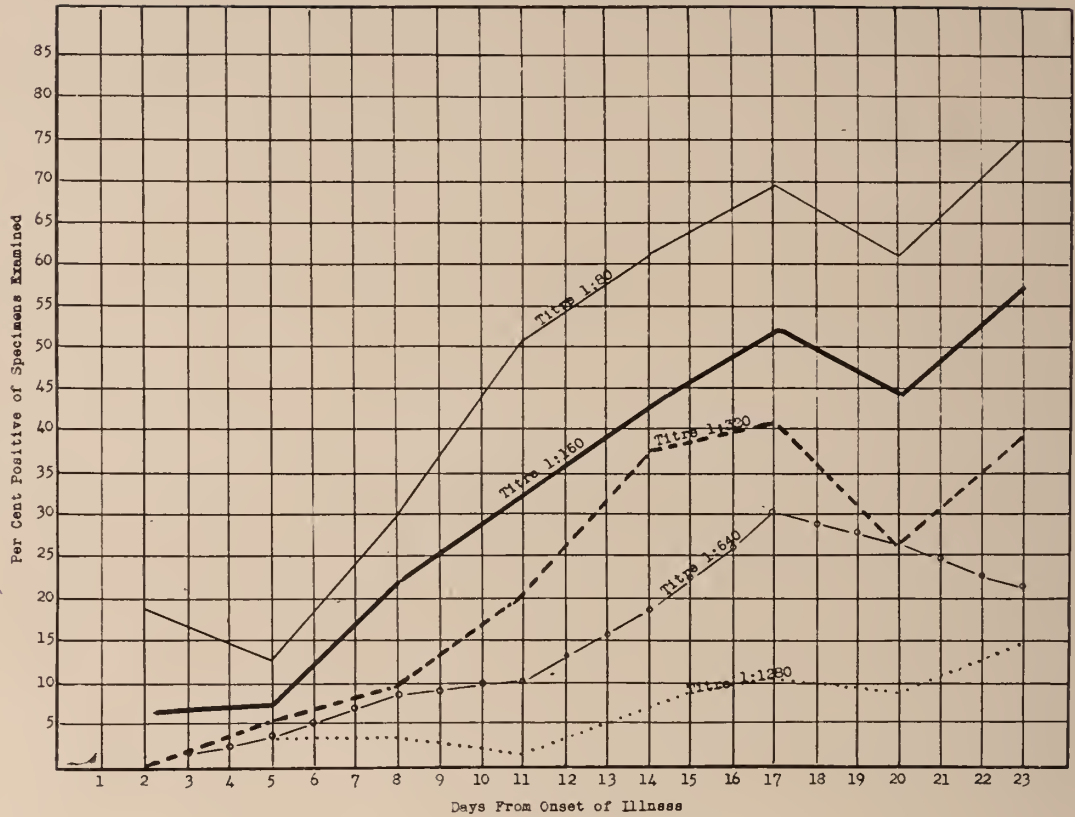


Fig. 24.

months the majority of the cases were in the summer months, May through September, with the peak in June and July. This is in complete agreement with Hull's seasonal distribution of Rocky Mountain spotted fever in eastern United States, shown in his book—"Diseases Transmitted from Animals to Man". The seasonal distribution of the deaths is the same as that of the cases.

Figure 19 shows that the seasonal incidence of typhus fever is not as obvious as that of Rocky Mountain spotted fever. Maxey, in his elaborate study of typhus fever, noted that cases occurred all year but that the maximum incidence was summer and fall, with 70 per cent of all cases falling between June 1 and November 30. The same was found to be true of Virginia cases, with 74 per cent in the months of June through November.

The color, sex and age distribution of the cases reported on questionnaires are of particular interest. Less than 10 per cent of the cases of both diseases were colored, a number too small to be studied sepa-

ately. In this connection it is interesting to note that Maxey concluded after his study of typhus fever that "the negro for some unknown reason is about exempt". The sex distribution is, however, significant. Fifty-nine per cent of the typhus cases and 63 per cent of the Rocky cases were males. Figure 20 shows the age distribution of Rocky Mountain spotted fever cases. As you can see from the graph, the majority of the cases are in the younger age groups, 21 per cent being in the single age group 5 to 9 years. Hull states that neither sex nor age have any influence on susceptibility to the disease. He says that the differences in age and sex are explained by the greater risk of exposure to ticks, by reason of the occupations of adult males and the more frequent excursion of children into tick infested areas in the course of their play. Figure 21 shows that the age distribution of typhus fever is noteworthy, in that the cases are fairly evenly distributed over the entire life span.

Figure 22 shows the day of eruption compared to

TITRES OF AGGLUTINATION TESTS FOR
TYPHUS FEVER IN RELATION TO ONSET OF ILLNESS

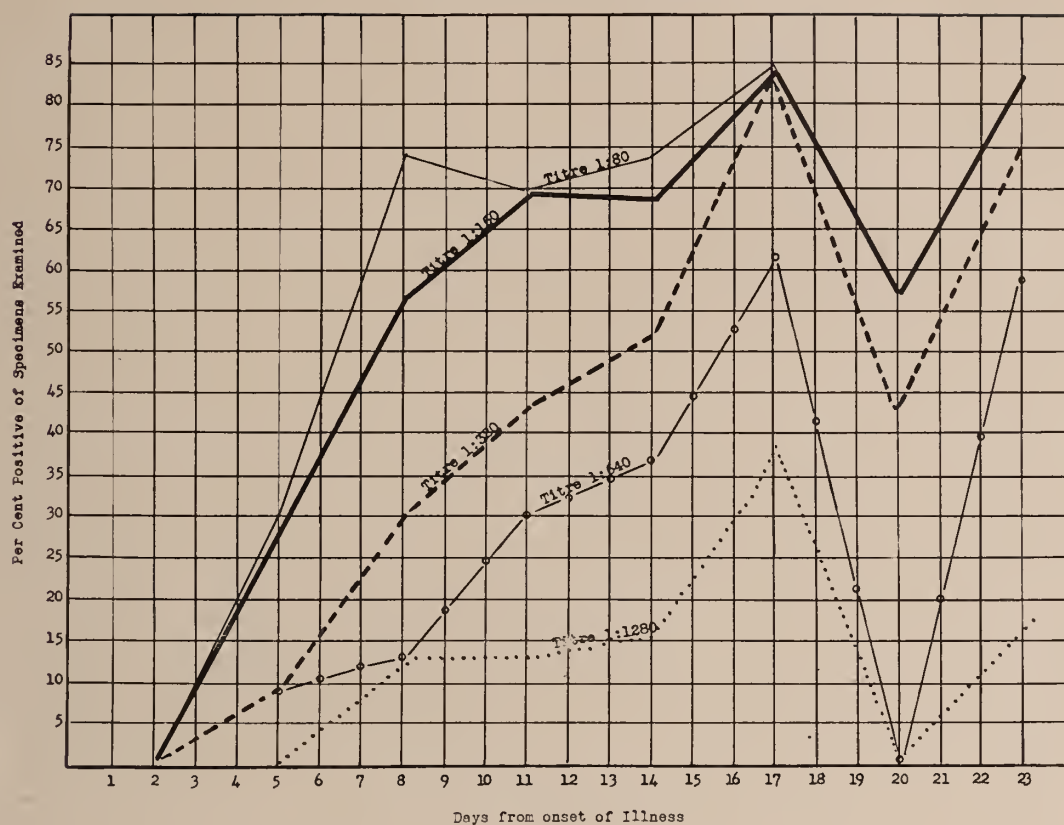


Fig. 25.

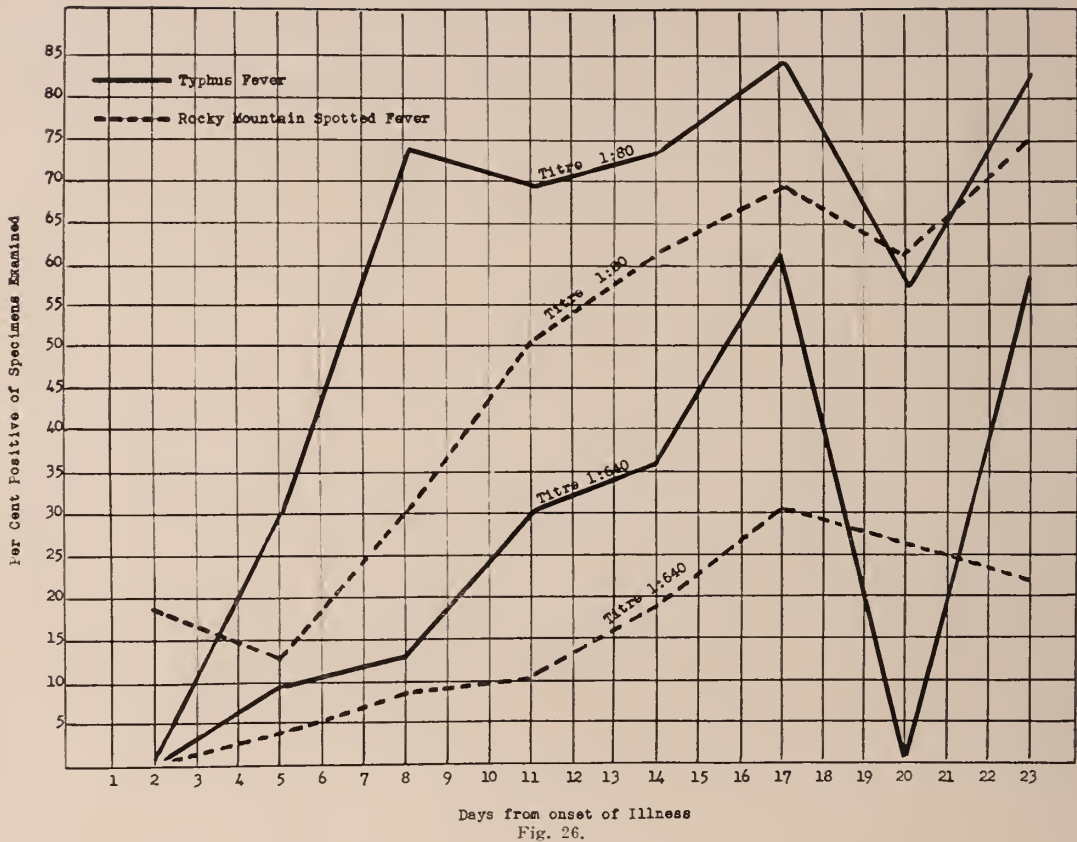
the day of onset for both diseases. In Rocky Mountain spotted fever the rash appears earlier than in typhus fever. The average day after onset is 5.5 days for Rocky Mountain spotted fever and 6.5 days for typhus. From the graph you will note that the rash appears on the 5th day in the greatest number of Rocky cases and on the 7th day in typhus cases. There was no difference in the males and females.

Figure 23 shows the duration of the fever of those who lived. The average duration of fever for both diseases is a fraction over 16 days. However, as you can see in the graph more cases of Rocky Mountain spotted fever than typhus fever run a fever for a long time. The average for the typhus cases was brought up by a few cases that may well have been misdiagnosed.

The next three figures are particularly interesting. The data on the Weil-Felix reactions was rather scarce, but, despite the deficiency in data and the probable misdiagnosis of some cases, there is a marked difference in typhus and Rocky Mountain

spotted fever. What we did was take the total number of specimens examined in a three day period and see what percentage were positive in five dilutions, 1:80, 1:160, 1:320, 1:640 and 1:1280. Figure 24 shows the results for Rocky Mountain spotted fever. The drop in all the curves on the 20th day is probably not significant but due only to the small number of specimens examined that late in the disease. You will observe that in all dilutions the maximum number of positives is not reached until the 17th day. This is in accord with the experience of others. You will recall, however, that Parker selected 1:320 as a diagnostic titre and 1:160 as suspicious. As late as the 17th day only 41.3 per cent of our cases were positive in the diagnostic dilution and only 52.2 per cent positive in the suspicious dilution. Let us now look at the similar graph for typhus fever (figure 25). Immediately you are struck with the higher percentages positive in every dilution. Moreover, a considerable number are positive in dilutions higher than any

TITRES OF AGGLUTINATION TESTS FOR
ROCKY MOUNTAIN SPOTTED FEVER AND TYPHUS FEVER
IN RELATION TO ONSET OF ILLNESS



shown on this graph. The same meaningless dip as seen in Rocky Mountain spotted fever appears on the 20th day and the maximum again comes on approximately the 17th day. In typhus fever 83.3 per cent of the specimens examined on the 17th day are positive in both the diagnostic and suspicious titres. Figure 26 shows the 1:80 dilutions and the 1:640 dilutions for both diseases on the same graph. The solid line is typhus fever and the broken line is Rocky Mountain spotted fever. This shows how in both dilutions the per cent positive is much higher in typhus fever than in Rocky Mountain spotted fever. For some reason typhus fever agglutinates proteus OX19 in higher titres than does Rocky Mountain spotted fever, but, again, let me remind you that the Weil-Felix test is specific for neither disease and can only be used as an aid in diagnosis.

Among the questionnaire cases, the fatality rate was 15.9 per cent for Rocky Mountain spotted fever and 7.3 per cent for typhus fever. This is a little lower for Rocky and higher for typhus than the

figures generally given but not different enough to be significant. For both diseases the average day of death was 13.5, with death falling anywhere between the 5th and the 38th day.

Two hundred and twenty-one, or over 50 per cent, of the cases of Rocky Mountain spotted fever gave a definite history of tick bite. The greatest number were bitten 7 or 8 days before the onset of the disease, with the majority falling between 1 and 15 days. Only 8, or 7.3 per cent, of the typhus cases gave a history of tick bite. Twenty per cent of the cases of Rocky Mountain spotted fever gave a history of rat infestation at home or place of business, while 52.3 per cent of the typhus cases gave a similar history. A negligible number in both diseases had a history of lice or bed bugs.

In conclusion, it can be said that, generally speaking, the data on cases of Rocky Mountain spotted fever and typhus fever in Virginia coincides fairly well with what is known about these two rickettsial diseases.

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DISCUSSION

DR. H. B. MULHOLLAND, Charlottesville: I am sure that all of us will profit by reading Dr. Henderson's paper when it is published, because it is a very excellent survey of the whole question of Rickettsial diseases. We have been particularly interested in spotted fever. I do not think I have seen, or at least I have not recognized, a case of typhus fever recently in the University of Virginia Hospital. Probably we should not see much typhus fever there, because we draw our patients from the country districts, whereas typhus fever patients come mostly from the urban areas.

I should like to ask Dr. Henderson several questions: (1) Whether any survey has been made of the rats in various sections of Virginia to determine the prevalence of rickettsial infestation. (2) Is the reduction in spotted fever cases during the last three or four years due to the fact that a vaccine is being used prophylactically in individuals who must spend a good deal of time outdoors. We have given vaccine to a number of children the past few years. (3) Have you had any experience with spotted fever serum, which has been used experimentally for the past four or five years, and whether you think atabrine, which the Germans use, has any value at all.

DR. HENDERSON, closing the discussion: We have never made a survey of rats to determine whether they are carrying the rickettsia. About the only way to do it would be to test a sufficiently large sample for immunity. We should like to do this at a later date.

In connection with the number of cases of Rocky Mountain spotted fever, I believe we have not reduced the number of cases by free distribution of egg-yolk vaccine, as distributed by the United States Public Health Service. We have for several years distributed this. But when we think of the few immunizations that will be produced, I doubt if it is responsible. Possibly the decrease in Rocky Mountain spotted fever may be due to a decrease in the number of ticks, or some factor with which we are not familiar.

The rabbit serum is prepared at present by Lederle Laboratories. About one-third of the ampoule is given intramuscularly after you test for sensitivity, and the other two-thirds is given after an interval of eight hours. Dr. W. A. Browne, of Alexandria, informed me of one case in which the Arthus Phenomenon had developed in a boy following administration of the serum.

AGRANULOCYTIC ANGINA—A DRUG HAZARD*

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Richmond, Virginia.

Agranulocytic angina was known to only a few physicians two decades ago. Now it is a matter of informed concern to every doctor. It was inevitable that we would learn rapidly about this new disease for: (1) many cases proved fatal; (2) most cases appeared to be caused by drugs we prescribed for our patients; and (3) the disease has shown a special propensity to kill us doctors. The early observation that physicians, pharmacists and nurses were attacked out of all proportion to their percentage of the whole population constituted a strong clue pointing to some recently introduced drug as the causative agent. Presumably the disease has occurred and killed now and then over a long period of time.

At length, some of its features were observed¹ and thought significant. Then, a few cases were reported,² though the symptoms were not fully understood. It remained for the German pathologist, Werner Schultz,³ after studying a group of six cases in 1922 to recognize the disease as an entity and describe its characteristic syndrome.

Stimulated by his report, a number of others^{4,5,6,7} became alert to recognize the disease, and undertook to discover the etiology. Schultz thought it peculiar to women. While all six of Schultz's cases proved fatal, some survivals were reported. It was noted that prostration, high fever and other grave symptoms follow the leukopenia, rather than precede it, as Schultz and others believed.

As to etiology, Schultz could do no better than to call the disease constitutional. He isolated several kinds of organisms from lesions, but could establish no causal relation. Other pathologists⁸ found virulent organisms in patients having the disease, reported them as the cause, along with denial of the disease as an entity, and suggested sepsis with granulocytopenia, or agranulocytic infection as the proper name for the disease condition.

When determined, the etiology was as remarkable as the disease itself. Several pathologists, notably Kracke,⁹ had suspected the cause to be a benzol-ring drug acting on leukopoietic tissues with a special idiosyncrasy. Following this lead, scores of studies were made and suspicion became conviction.

The earlier studies in etiology dealt chiefly with

investigations of amidopyrine. Later it was found that kindred drugs produced the disease. Madison and Squier¹⁰ reported, in 1933, a series of fourteen cases, all of which followed the taking of amidopyrine, alone, or in combination with some other drug. In six cases, in which the drug was continued, there was a mortality of one hundred per cent. In eight, in which the drug was discontinued, there were six recoveries. In two, in which the drug had been taken previously, repetition was followed by a definite fall in the granulocytes. In 1933, Butt *et al*¹¹ proved that amidopyrine in large doses had a toxic effect on the bone-marrow of dogs. Colmes *et al*¹² showed that a few grains of amidopyrine administered by mouth, or a few milligrams given intradermally, to patients who had recovered from previous attacks induced a severe return within a few hours.

Dameshek¹³ studied eighteen cases and decided twelve to be due to amidopyrine, two to allonal, two to dinitrophenol, and one each to arsphenamine and pantopon. It seems significant that in one of the two cases reported by Kastlin,⁶ in 1927, six arsenical injections had preceded the onset of the disease. Numerous cases have been reported following the administration of causalin.¹⁴⁻¹⁵ The number of reported cases resulting from the administration of the sulfonamides run into several hundred.

In Jackson's¹⁶ series of 109 cases the use of drugs was blamed as follows: Thirty-four to sulfanilamide, eight to sulfapyridine, thirty-nine to amidopyrine, seven to allonal and four to causalin. The rest were due to various preparations, herein listed.

In the face of the accumulated evidence on the causation of the disease, some cases are still believed to be idiopathic. It may well be that there is an offending drug or agent which has not as yet been determined. FitzHugh¹⁷ states that substances other than drugs—food, bacterial products and metabolites—may produce the disorder through mechanisms of acquired sensitivity.

An incomplete list of the drugs which have been reported or suspected to have caused agranulocytic angina includes amidopyrine, arsphenamine, the sulfonamides, causalin, allonal, bismarsen, phenacetin, quinine, cibalgine, allurate, amidophen, cinchophen, neocinchophen, amytal compound, dinitrophen-

*Read at the annual meeting of the Medical Society of Virginia in Roanoke, October 25-27, 1943.

nol, sedormid, novaldin, neostibosan, plasmochin, bismuth and nirvanol.

The pathology of the disease is primarily in the bone-marrow. All that follows is secondary. Normally, the red bone-marrow makes erythrocytes, granular leukocytes and platelets. In this disease state the bone-marrow's ability to form granulocytes is greatly impaired or even totally destroyed. As Roberts and Kracke¹⁸ say, "The factory that makes granulocytes goes on a strike and shuts down." The strike, however, appears to be a partial one, for while the bone-marrow ceases to make granulocytes, it continues its normal output of erythrocytes and platelets. These pathologists reported a case studied through two attacks. Having studied the first, they made daily blood counts over a period of time before the onset of the second, and found that the granulocytes disappeared from the blood stream two or three days before the appearance of the clinical symptoms.

The onset of the disease is sudden and stormy. The first complaint is usually of sore throat. Prostration, chill and high fever follow promptly. If the patient does not die in the acute stage, ulcerative lesions develop in the throat, mouth and gums, and sometimes on the vulva and anus. In the early stage the condition may be mistaken for tonsillitis, sore throat or influenza. In some instances, there is a prodromal sore throat; if sore throat is followed by chill and high fever, inquiry should be made regarding the drugs the patient may have taken and a blood examination made.

The cervical lymph-nodes are usually involved, due to the secondary infection of the throat. The spleen and liver may or may not be palpable.

The most significant feature of the syndrome is the blood picture. In no condition are the white cells, particularly the polymorphonuclear cells, so few. The white cells may number less than a thousand, and none of these may be polymorphonuclears.

Agranulocytic angina must be differentiated from lymphatic leukemia, and from overwhelming sepsis. In agranulocytic angina,¹⁹ the anemia is not of high degree; the platelets are normal; it is rare in children, is seen in the aged; many myelocytes appear in the blood stream; and with a temperature of 102 to 104 degrees the patient is acutely ill. In lymphatic leukemia, the anemia is grave, the platelets decreased; it is common in children, rare in the aged; and with a temperature of 102 to 104 degrees the patient may not appear ill. In overwhelming sepsis,

sis,²⁰ anemia, slight at first, is rapidly progressive; many immature white cells appear in the blood stream; the platelets are increased. The main differentiating point is the infectious process which precedes the blood changes.

The reported deaths from agranulocytic angina in Virginia in the past eight years number thirty-six, by years as follows: 1935—5, 1936—1, 1937—12, 1938—2, 1939—1, 1940—10, 1941—4, 1942—1.

Three of the eighteen deaths since 1938 were due to one of the sulfonamides, according to replies to letters sent physicians who reported these deaths. For 1941, Sutliff *et al*²¹ reported in considerable detail twenty-eight deaths from sulfonamide toxemia in New York City among 74,553 pneumonia deaths, eight of which were due to agranulocytic angina. The difficulty of obtaining reliable data in cases of death from this cause is obvious. Long's²² survey of the literature discovered reports of 250 cases of granulocytopenia from sulfonamide compounds. He did not indicate the mortality.

Three cases follow in brief outline.

Case 1. A white man, aged 54, previously in good health, was given amidopyrine in the treatment of influenza, December, 1934. While no symptom characteristic of agranulocytic angina was noted immediately, there ensued a definite decline in well-being, generalized pains, progressive weakness and stiff joints, which at length confined him to bed the most of the time. An anal fissure was the occasion for hospitalization, December 7th, 1935, nearly a year after taking the amidopyrine. On the third hospital day, after cauterization of the fissure, the typical syndrome of agranulocytic angina developed—chill, fever, prostration, coma, and disappearance of polymorphonuclears from the blood stream. The temperature, which was normal on admission, and 101 degrees on the second day, rose to 104.2 degrees and then varied from 102 to 105 degrees for a period of seventeen days. The remainder of the 74 days in the hospital, it was subnormal, normal or moderately elevated. Treatment instituted a week after the acute onset consisted first of 20 c.c. pentnucleotide intramuscularly, b.i.d.; then blood transfusions on the 10th and on the 12th. The blood findings illustrate the course of the disease.

The patient was a semi-invalid after leaving the hospital. The red cell counts varied from three-and-a-half million to four million, the whites from two thousand to four thousand—polymorphonuclears five to six per cent, occasionally as high as twenty

Day	R.B.C.	W.B.C.	Hgb.	Pmn. N.	Pmn. E.	Pmn. B.	Lymphs.	Mon.	L. Mon.
Admission	4,580,000	3,500	85	39	-	-	48	11	--
5th	-----	-----	-----	10	-	-	42	48	--
7th	3,940,000	4,700	80	7	1	-	42	49	--
9th	-----	14,000	-----	4	2	-	36	58	--
12th	-----	4,600	-----	1	-	-	50	49	--
14th	-----	5,200	-----	1	-	-	49	50	--
15th	4,360,000	2,300	98	12	2	-	32	54	--
16th	-----	2,600	-----	3	-	-	47	50	--
19th	-----	3,600	-----	14	-	4	48	29	--
21st	5,020,000	5,400	97	28	2	-	48	--	22
27th	4,740,000	5,300	94	53	3	-	37	--	7
30th	-----	5,500	-----	53	-	-	37	10	--
35th	-----	6,200	-----	39	2	-	39	19	--
37th	-----	8,400	-----	48	3	-	32	17	--
42nd	-----	5,300	-----	40	3	1	39	16	--
48th	3,760,000	5,600	74	45	2	-	42	11	--
53rd	-----	8,500	-----	36	2	-	54	8	--
61st	-----	7,800	-----	34	6	-	47	13	--
67th	-----	8,500	-----	40	3	3	45	9	--
69th	3,680,000	7,400	72	39	4	2	40	15	--

Wassermann Negative.

per cent. He was given, as before, numerous injections of pentnucleotides and also liver extracts parenterally at varying intervals. After one of the injections, twenty-eight months after his first hospitalization, he developed an abscess in the right ischio-rectal region. Again, he was admitted for six days and the abscess drained. Two blood counts were made.

Day	R.B.C.	W.B.C.	Hgb.	Pmn. N.	Pmn. E.	Pmn. B.	Lymphs.	Mon.
Admission	4,080,000	6,900	82	40	3	1	31	25
3rd	4,200,000	7,300	86	47	5	-	36	12

The course of the illness was downhill after that episode. He was given more injections of pentnucleotides, developed another abscess in the left buttock, and was again returned to the hospital two months later for another incision and drainage. Blood counts made at that time revealed a definite anemia as well as more pronounced leukopenia.

Day	R.B.C.	W.B.C.	Hgb.	Pmn. N.	Pmn. E.	Pmn. B.	Lymphs.	Mon.
Admission	3,880,000	3,100	80	20	7	1	42	30
4th	-----	6,000	-----	14	1	-	61	24

His condition grew steadily worse after this third confinement. He developed numerous lesions in the mouth, throat, nose and sclerae and the anal region, and open sores appeared elsewhere on the body, particularly on the toes and fingers. The anemia and leukopenia became of severe grade, and the number of polymorphonuclears remained low. All treatment except irrigations and wet dressings to lesions were discontinued. He was admitted to the hospital the fourth and last time in a moribund condition, August 7, 1939, three years and eight months after the onset of the disease. Two blood transfusions on alternate days had no effect whatever on the disease, as the blood counts indicate.

Day	R.B.C.	W.B.C.	Hgb.	Pmn. N.	Pmn. E.	Pmn. B.	Lymphs.	Mon.
Admission	2,640,000	2,100	36	51	2	-	39	8
2nd	-----	1,850	-----	53	-	-	40	7
3rd	-----	1,900	40	62	4	-	32	2

The patient died the ninth hospital day. No autopsy was performed.

Case 2. A white woman, aged 60, gave a confusing history: She had cut her finger ten days before, and it became infected. Shortly thereafter she felt generally indisposed and began to have fever and night sweats. During this period she handled a freshly killed rabbit. The relationship of this incident to her sickness was not at all clear.

She did not complain of any particular pain, but she appeared critically ill, and had a temperature of 103.5 degrees. The physical finding was an ulcer on the left fore-finger. She was immediately hospitalized. The first impression was staphylococcic septicemia, the second tularemia. Treatment consisted of codein, wet dressings and sulfadiazine. The temperature was elevated and septic in character the first week, 100 degrees to normal the second, irregularly elevated the third.

One gram of sulfadiazine was given every four hours for the first eleven days. With a decrease in temperature by that time the dose was reduced to half a gram daily for five days. With its increase, however, the dose was doubled and continued until the twentieth hospital day, at which time, the laboratory reported a positive agglutination for B. tularense of 1 to 50. All blood cultures were negative. A total of 108 grams of sulfadiazine had been given and a blood examination at that time showed a red

cell count of 3,800,000 with a hgb. of 71 per cent and a white count of 5,100.

Three days later the syndrome of agranulocytic angina developed. Its treatment consisted of liver extracts parenterally and blood transfusions for three successive days. The disease ran a stormy course to death on the fifth day after its onset. An autopsy was performed.

The blood counts were as follows:

Day	R.B.C.	W.B.C.	Hgb.	Pmn. N.	Pmn. E.	Pmn. B.	Lymphs.	Mon.
Admission	4,700,000	16,400	86	58	-	-	31	11
10th	-----	5,900	70	--	-	-	--	--
20th	3,800,000	5,100	70	--	-	-	--	--
24th	4,300,000	1,350	--	0	-	-	96	4
25th	-----	1,600	--	1	-	-	96	3
26th	-----	3,100	--	0	-	-	98	2

Autopsy diagnosis by Dr. L. J. Buis—Johnston-Willis Hospital:

- (1) Agranulocytic angina
- (2) Tularemia, splenic (ulcero-glandular type)
- (3) Pulmonary atelectasis and congestion
- (4) Pericardial adhesions
- (5) Uterine fibromyomata.

The bone-marrow from the sternum and lumbar vertebrae was of a bright red color. Microscopic examination revealed absence of mature granular leukocytes, many myelocytes and promyelocytes, and the normal number of red blood cells in all stages of development.

Case 3. A white man, aged 24, an Army Lieutenant, gave the history of having been in a Camp Hospital fifteen days of the previous month, for general indisposition. He had not felt well since. Two weeks later, while at home on leave, he developed a sore throat and high fever. He was given no drugs in the hospital and had not taken any the previous year.

He was acutely ill, with small ulcerative lesions in the throat, temperature 104 degrees, the range for a period of ten days being 102 degrees for mornings to 104 and 105 degrees for afternoons. He was not hospitalized. A blood examination established the diagnosis of agranulocytic angina. Treatment consisted of codein and aspirin the first twenty-four hours; subsequently codein as needed, and a saline mouth-wash and throat gargle.

Recovery took place in four weeks. The blood counts follow:

Day	R.B.C.	W.B.C.	Hgb.	Pmn. N.	Pmn. E.	Pmn. B.	Lymphs.	Mon.	Wass.
1st	4,800,000	2,000	98	2	1	1	40	56	Neg.
3rd	-----	3,900	98	5	2	-	45	48	----
7th	-----	4,000	95	20	2	2	48	28	----
20th	-----	4,500	90	30	1	1	60	8	----
On discharge	-----	5,400	86	46	1	1	52	--	----

If the tendency of these three cases were uniform or in the same direction, some inference might be made as to the value of treatment. In one instance, however, the patient lived nearly four years with treatment; the second died in spite of treatment, the third recovered without it. They are, therefore, in accord with the various results of therapy reported by authorities²³ in this field, and lend some support to the extreme opinions, varying from disbelief²⁴ in any form of treatment to enthusiasm²⁵ for the several therapeutic measures—pentnucleotides, blood transfusions, yellow bone-marrow, liver extracts and adenine sulfate.

I believe Dameshek²⁶ explains these varying results in his statement, "If the bone-marrow leukocytes are not irretrievably damaged, the patient will recover; otherwise the effects of therapy in a given case are very dubious."

The emphasis is now on prevention of the disease, and this is not without its problems. For some time, hematologists have advised against prescribing amidopyrine or any of its numerous congenors. Three leading drug stores, in Richmond, informed me they are filling a decreasing number of prescriptions for these drugs. The arsenicals and quinine are directed against dreaded enemies, and their value unquestionably justifies the risk of an occasional ill result. The possibilities for evil of all incriminated drugs should be considered carefully before prescribing them.

The reported cases of agranulocytic angina from sulfonamides have been considerable. They have caused also numerous toxic reactions—skin rash, fever, hematuria, oliguria, acute hemolytic anemia, leukopenia; and liver and kidney damage. However, while their benefits have more than compensated for their ill effects, in the light of known dangers they should be administered more discriminately. It is wise to use less harmful drugs in non-fatal diseases. The prescribing of one of the sulfonamides for any and all febrile conditions is to be discouraged because

of the reason given, and because of the additional risk of sensitizing a large portion of the population to these potent drugs and so depriving many of their curative powers in future illnesses. Tracy Mallory²⁷ says, "Do not give me sulfonamide for any non-lethal complaint."

It appears also that the minimum rather than the maximum dose should be administered, and that they should not be given over a long period of time. It is obvious that frequent white blood cell and differential counts should be made on patients receiving them, and the physician should be on the lookout for any indication of an idiosyncrasy. It is generally agreed that, where feasible, tests of degree of concentration of the drugs in the blood are well worth while.

SUMMARY

Werner Schultz, in 1922, recognized agranulocytic angina as a disease entity and described its syndrome. Other pathologists added much to our knowledge of the disease. Its etiology remained a baffling problem for nearly a decade. At length Kracke suspected the disorder was due to an idiosyncratic reaction of the bone-marrow to certain drugs, especially those containing the benzol ring, such as, amidopyrine. This suspicion was verified in several studies.

The pathologic physiology is a destruction of the function of the bone-marrow to make white blood cells, resulting in the disappearance of the white blood cells from the blood stream, particularly the polymorphonuclears.

The distinctive symptoms are sore throat, chill, fever, prostration, the most constant being sore throat.

Thirty-six deaths have been reported in Virginia the past eight years, three of which were ascribed to one of the sulfonamides.

Three cases are outlined briefly. In the first, the patient had taken amidopyrine eleven months before the acute onset, which was preceded by a prodromal period of ill health. He was treated with the recommended therapeutic measures—pentnucleotides, blood transfusions and liver extracts parenterally, and lived three years and eight months. In the second the disease developed after the taking of sulfadiazine, and was treated with liver extracts parenterally, and blood transfusions. Death ensued the fifth day after onset. In the third case no drug was taken before onset which is under the slightest suspicion, nor was any drug given in the course of the illness, yet recovery took place.

These three cases appear to be in accord with the various results of therapy reported by the authorities in this field, and lend some support to the extreme opinions varying from no faith in any form of treatment, to enthusiasm for the different recommended therapeutic measures.

Some means of prevention are suggested. There are indications that physicians have already heeded the warning of hematologists as to the danger of amidopyrine under its various names.

It is suggested that the sulfonamides be prescribed more discriminatingly than heretofore, and in only grave diseases. With assiduous care it is believed many of the ill effects of these valuable drugs can be prevented.

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DISCUSSION

DR. WILLIAM B. PORTER, Richmond: We must appreciate that Dr. Copley has brought to us a very timely discussion. I shall, however, take exception to some of the premises adopted, because I feel that the entity of so-called "agranulocytic angina" has been considerably confused, by including in this syndrome many diseases which should not justifiably be placed there. The question of the causes of leukopenia is still a very difficult one to answer. I think that the essayist has undoubtedly proven beyond a doubt that one of the frequent causes of leukopenia is the use of certain well known drugs. It is not necessary to enumerate these.

On the other hand, we must recognize that leukopenia of an infectious origin, leukopenia associated with the blood dyscrasias, Hodgkin's disease, and miliary tuberculosis are among those very difficult diseases to diagnose and yet are among the most frequent causes for leukopenia. What I wish to emphasize is that the diagnosis of so-called Schultze's disease is a very difficult one; and we should be very cautious, I think, in throwing into this category two of the patients whom Dr. Copley has presented. One of the authors to whom he referred, Jackson, has given sound caution in this connection. He emphasizes that it is very unwise to make the diagnosis of agranulocytic angina if the leukocyte count does not fall below 2,000. In the first case, discussed by Dr. Copley, the leukocyte count was about 3,000. I should be interested in watching the course of this for splenic anemia is a likely diagnosis.

In the second case I should prefer to use the term "sulfonamide idiosyncrasy" rather than agranulocytic angina. In the third case I should much prefer using the term "infectious leukopenia" rather than agranulocytic angina. The case recovered promptly under Dr. Copley's skillful treatment.

Finally, I should like to re-emphasize what Dr. Copley said in the last paragraph of his paper, namely, that the indiscriminate use of these very powerful drugs in patients who have relatively simple diseases is not justified. They should be reserved for patients who have serious maladies.

I am going to differ with Dr. Copley in his statement about the dose of the sulfonamides. It has been emphasized by many authors that the indications for the sulfonamides are pretty clear. Once the decision is made that the patient does have a disease which requires the administration of the sulfonamides, there is a specific dosage which is necessary to control the disease. There is not any excuse for the use of a small amount of the sul-

fonamide drug because the patient has a mild type of infection and the use of a large dosage when the patient has a severe type of infection. For instance, a pneumococcus infection requires a certain concentration of the drug for the control of the disease. The only difference may be that the patient with the severe type of disease requires intravenous dosage so that the concentration may be built up quickly, whereas the patient with a less severe type may have the slower oral treatment.

I am very grateful to Dr. Copley for bringing us this paper and think he has made a timely contribution to the program.

DR. PAUL D. CAMP, Richmond: I should like to say just a few words and ask Dr. Copley and Dr. Porter whether they have ever seen a case that showed the complications that this one had. This patient was a male between forty-five and fifty who had been perfectly normal. I had made periodic examinations of him. His cardiovascular system was normal. He was definitely an allergic individual. He had a back strain and developed distinct sciatic nerve symptoms. I had a neurologist see him, who prescribed one of the proprietary drugs containing amidopyrine. The patient happened to be a pharmacist and, instead of taking the prescribed amount of the drug he took two or three hundred of the tablets over the period of a month or so. He developed, I guess, what you might call agranulocytic angina. Whether he had an idiosyncrasy to that drug or not, he developed the typical syndrome. He was very ill, but, fortunately, recovered. During his convalescence he developed auricular flutter, which was controlled by digitalis. When we were able to get him to the hospital we found he had definite hyperthyroidism, which persisted for quite a while. We treated his hyperthyroidism conservatively. He is now in normal health, except that he continues to have his allergic symptoms, consisting of bronchial asthma, from time to time, and so forth; and he is still not as strong as he was, but his blood picture has returned to normal. It has been checked from time to time and remains normal.

I should like to ask Dr. Copley and Dr. Porter if they have seen auricular flutter and hyperthyroidism developing in the course of this disease.

DR. COPLEY: I should like to ask Dr. Porter to give his experience and his opinion as to the complications of which Dr. Camp spoke.

DR. WILLIAM B. PORTER: I have not seen such a complication. If I had seen it, I think I would ask myself the question if I had not overlooked the hyperthyroidism, instead of its developing afterwards.

DR. CAMP: I might say that there was no clinical indication of hyperthyroidism before. We had never done a basal metabolism on him, because there was no indication for it. He had been checked from time to time thoroughly. I did not previously do a cholesterol nor a basal metabolism because there had been no indication for it.

DR. COPLEY, closing the discussion: I appreciate Dr. Porter's stimulating discussion. It is good practice to challenge diagnoses. We knew from statistics covering

large series of cases that lobar pneumonia carried a mortality rate around 35 per cent before the introduction of the sulfonamides. When physicians in the past, therefore, claimed 10 per cent or 15 per cent, as a result of some particular therapy, I suspected that they had included in their series less fatal respiratory infections. Obviously, studies based upon incorrect diagnoses are of little value.

Manifestly, the diagnosis of blood dyscrasias generally is more difficult than that of some of the more frequently encountered disease conditions. However, leukemia of an infectious origin, Hodgkin's disease and miliary tuberculosis, conditions Dr. Porter mentions, and also lymphatic leukemia are now known to be definite disease entities, and have been thoroughly described by Jackson, Fitz-Hugh, Kracke, Dameshek and others. Furthermore, agranulocytic angina has a more typical syndrome than any of these disorders, and I believe should be differentiated from them without a great deal of difficulty. Certainly, this disease entity need not be confused with either Hodgkin's disease or miliary tuberculosis, because there is no real similarity, either in the blood pictures or the clinical courses.

I am confident the three cases I have described are correctly catalogued. The first was seen by several internists and hematologists, including Dr. Porter's medical staff, and the diagnosis of agranulocytic angina was concurred in. Dr. Porter himself advised an X-ray examination of the chest, apparently to rule out a possible Hodgkin's disease and tuberculosis. Also splenic anemia was distinctly discarded as an explanation of the case. The leukocytes fell below 2000, which Dr. Porter overlooked, 1850 and 1900 respectively on two different counts, and the onset and clinical course were typical of agranulocytic angina.

There is no point in terming the second case, "sulfonamide idiosyncrasy," and this would not alter the pathology involved. Agranulocytic angina is the result of an idiosyncrasy on the part of the bone marrow to certain drugs. In this particular instance, the offending drug was sulfadiazine. An idiosyncrasy is a character-

istic of this type of bone marrow response, and not a disease in itself. Calling the case "sulfonamide idiosyncrasy" is merely quibbling over terms.

The signs and symptoms and also the blood picture of the third case were thoroughly characteristic of those of agranulocytic angina. Neither was there any infectious process to explain the leukopenia. I am therefore certain all three cases are correctly labeled.

Dr. Porter is correct in asserting that a certain concentration of the sulfonamides is necessary to control pneumonia and other conditions requiring the drug. I believe a concentration from 10 mgs. to 14 mgs. of sulfadiazine per 100 c.c. of blood is required for pneumonia. Whatever dosage, therefore, is necessary to maintain a concentration sufficient to control the pneumonia, obviously, should be administered. What I caution against, is giving the drugs with complete abandon and over long periods of time, when the patient is well out of danger, assuming they were as safe as aspirin. The length of time the drug was given was a factor in nearly every one of the twenty-eight deaths Sutliff *et al.* reported from sulfonamide toxemia in New York. The length of time the drug was administered was a definite factor in the death of the second case I described.

I am very glad Dr. Porter adds emphasis to my contention that physicians ought not to administer the sulfonamides indiscriminately for many of the relatively simple disease conditions which readily respond to less hazardous medication. I have been impressed by the observation that some patients rate a physician's skill on the basis of whether or not he prescribes the sulfonamides. I believe the public needs to be re-educated as to the dangers of these preparations. It is a splendid thing, therefore, that teachers in medical schools are lending their influence in this direction. I do not think amidopyrine should be administered at all.

I want to thank Dr. Camp for his question. The case he describes has the earmarks of agranulocytic angina. However, I have not seen a similar case.

An "Iconography of Vitamin Deficiencies",

Consisting of seven unretouched color photographs revealing symptoms of vitamin deficiency cases that often go unrecognized for long periods have been reproduced and are now being circulated to the medical profession by the Winthrop Chemical Company, Inc. The pictures were originally made at the Nutrition Clinic, Hillman Hospital, Birmingham, Ala., under the supervision of Dr. Tom D.

Spies, director.

Accompanying literature points out that many cases of vitamin deficiency may go unrecognized for a long period of time and that diagnosis is particularly difficult in subclinical types since "symptoms are merely suggestive and the physical signs may be minimal". Illustrations, however, it is stated cannot tell the entire story of the consequences of vitamin depletion.

ONE DAY TREATMENT OF SULFONAMIDE-RESISTANT ACUTE GONORRHEA WITH PENICILLIN— A PRELIMINARY REPORT

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Gonorrhea has been a problem for centuries. It is one of the most important causes for loss of time from duty among troops.¹

The medical profession has been searching for centuries for a perfect therapeutic agent for gonorrhea. Sulfonamides were at first thought to be the answer. Subsequent trial has proved that the sulfonamides are of value but they have their limitations. A drug is desired which will cure the largest number in the shortest period of time.

From recent reports in the literature^{2,3,4,5,6,7} it would appear that penicillin fills the need for such a drug. Herewith are presented the results obtained on a series of thirty cases of sulfonamide-resistant acute gonorrhea in the male treated with penicillin at a Military Reservation. Twenty-nine of these cases had had one or more courses of sulfathiazole. One patient was drug-sensitive.

TYPE OF CASES TREATED

1. All patients in this series were adult males and had had acute gonorrhea for periods ranging from 6 days to 3 months (average 25.5 days). All except one had been treated unsuccessfully with one or more courses of sulfonamide.

2. Two had had three courses of sulfathiazole. Eleven had had two courses of sulfathiazole. Seventeen had had one course of sulfathiazole.

3. The average case appeared with an extremely profuse, purulent, urethral discharge. At the completion of the penicillin injections, the urethral discharge had become so scanty that smears and cultures of prostatic fluid had to be obtained. At end of 24 hours there are usually present a clear mucoid discharge obtainable by urethral massage. This mucoid discharge was negative for the gonococcus. By 48-72 hours the mucoid drip disappeared and no urethral discharge or prostatic fluid was available.

All patients were admitted to the hospital for the one day treatment.

THERAPY

1. The penicillin used was supplied in crystalline form in ampules containing 100,000 Oxford units. Before use it was dissolved in 10 cc. sterile distilled water or sterile normal saline. Twenty thousand units (2 cc.) were administered intramuscularly (alternate buttocks) every three hours, for five doses (total of 100,000 U.).

2. Each patient had a smear of urethral discharge taken just prior to his first injection, and this was followed by smears and cultures of urethral discharge or prostatic fluid at the end of 3, 9, 24, 48 and 72 hours. A smear and culture at weekly intervals for next three weeks was performed.

RESULTS

All thirty cases became bacteriologically negative within twelve hours. Fifteen of the thirty cases became bacteriologically negative at the end of three hours; seven were negative at the end of six hours; one was negative after nine hours, and seven were negative at the end of twelve hours.

CRITERIA OF CURE

1. Consistently negative physical and laboratory findings for a period of not less than three weeks prior to discharge from medical observation.

2. A minimum of three consecutive negative gonococcal cultures taken not less than one week apart. The cultural material consisted of urethral discharge or prostatic fluid.

CONCLUSIONS

1. Thirty cases of penicillin treated sulfonamide-fast acute gonorrhea became bacteriologically negative within 12 hours after treatment was begun.

2. Two of the cases had had three courses of sulfathiazole, eleven two courses of sulfathiazole, while seventeen had had one course.

3. One hundred thousand units of penicillin were given in five divided intramuscular doses of 20,000

units each, at 3 hourly intervals, as a complete course of therapy.

4. No toxic effects were noted; blood counts and urinalysis done at 3, 12, 24 and 48 hour intervals were normal; urethral smears and cultures taken at three hour intervals during the course of treatment became negative within a period of twelve hours.

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Winthrop Chemical Company Twenty-Five Years Old.

On June 27, this Company informally marked its twenty-fifth anniversary at a dinner at the DeWitt Clinton Hotel, Albany, N. Y., which was presided over by Dr. Theodore G. Klumpp, president. The company was incorporated in 1919 and derived its name from John Winthrop, Jr., America's first chemist and Colonial Governor of Connecticut. At that time the company offered only 21 drugs, made into a total of 38 different items. Today Winthrop produces more than 150 different drugs, totaling about 750 different items. Penicillin, atabrine, and many other drugs, produced in their Rensselaer Research Laboratories, are serving the armed forces in battlefronts all over the world. In 1919, the New York office staff numbered only 12; today the executive and office personnel in New York and the branch offices total more than 400. Then, there were about 30 employees in Rensselaer, as compared to 1,550 engaged in the manufacturing plant and laboratories now.

Formation of the Division of Product Development of Winthrop Chemical Company was announced on the 29th. This Division, with headquarters at the Rensselaer plant, will explore the post-war commercial potentialities of products now being supplied by Winthrop to the armed forces, as well as new products developed in their laboratories.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

- Aldrich, C. A., & Aldrich, M. M.—Feeding our old-fashioned children. 1943.
- The American Pharmaceutical Association—The Pharmaceutical Recipe Book. 1943.
- American Psychiatric Association—One hundred years of American Psychiatry.
- Andral, G.—Medical clinic: diseases of the abdomen. 1843.
- Arnett, Alex Mathews—The story of North Carolina. 1942.
- Babkin, B. P.—Secretory mechanism of the digestive glands. 1944.
- Stern, B. J.—Family, past and present.
- Stern, K. and Willheim, R.—The biochemistry of malignant tumors.
- Strain, F. B.—Being born.
- Swartz, Jacob H.—Elements of medical mycology.
- Tenney, H. K.—Let's talk about your baby.
- White House Conference on Child Health and Protection—Fetal, newborn and maternal morbidity and mortality.
- Wiener, A. S.—Blood groups and blood transfusions.
- Wolf, A. W. M.—Parent's manual.
- Year Book of Dermatology and Syphilology—1943.
- Year Book of General Therapeutics—1943.
- Year Book of Neurology, Psychiatry and Endocrinology—1943.
- Year Book of Obstetrics and Gynecology—1943.
- Year Book of Pediatrics—1943.

TREATMENT OF SULFONAMIDE RESISTANT GONORRHEA—WITH A REPORT OF ELEVEN CASES CURED*

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Newport News, Virginia.

One of the recent challenges to medicine is the problem of treating the sulfonamide resistant strains of gonorrhea. The sulfonamides have made the treatment of the ordinary case of gonorrhea so easy that both the patient and the physician become very impatient when results are not as expected.

I first encountered this problem in the early days of sulfanilamide. There was no response to two series of 60 grams of sulfanilamide given 2 grams every four hours for three days and gradually reducing that dose. During the brief reign of sulfapyridine I had three cases that did not respond to this drug but which were cured by sulfanilamide.

With the advent of sulfathiazole the resistant cases became more rare and I did not encounter another until after sulfadiazine was on the market. I successfully alternated the sulfathiazole and sulfadiazine until Case A reported. On this case nothing but time was successful.

On the next resistant case the patient asked for a solution of permanganate of potash for urethral instillations and I decided to use a local solution of sulfanilamide, 7.5 gr. to an ounce of boiling water. At this time I also gave this patient .1 cc. of gonococcus filtrate intracutaneously. Improvement was marked but not rapid. After treating three cases by this method with successful results, I asked Dr. C. C. Haskell for a solvent that would allow stronger instillations. He suggested that a suspension might prove more effective than a solution and showed me a reported cure in about four weeks in which the duosulfon alone had been used. My last seven cases were treated with the duosulfon suspension instillations together with gonococcus filtrate given every three days when possible.

I consider the technic of instillations important. The patient is instructed to void, then wash out the urethra with two syringes of hot water. The duosulfon suspension is then well shaken, instilled into the urethra and retained for three minutes. This is done three times daily.

In the case reports herewith the following ab-

brevisions are used: Gonococcus Filtrate—GCF; Sulfathiazole — St; Sulfadiazine — Sd; Sulfanilamide—Sa.

Case A. W. A. S., white, male, 26 years. Exposed six days before reporting. Purulent urethral discharge noted that morning. No pain or burning. Laboratory report positive for Gram-negative intracellular diplococci. Patient was started on St gm. 2, and one gram every four hours. In three days there was no noticeable change. The treatment was changed to Sd with the same dosage for four days with no change. Sd continued for one week with no change. St was given for one week with intracutaneous GCF every three days with no improvement. GCF was continued for five doses and urine was alkalized after the week of St. There was no improvement. Ascorbic acid was given orally 500 mg. daily for three days and 300 mg. daily for one week; there was no change. The alkaline treatment was resumed and St 2 gm. every four hours was given for two days with no change. Sd was repeated for one week with no change. Acriflavin and potassium permanganate solution instillations were alternated until the patient finally ceased returning for treatment and said that he was well.

Case 1. R. A. C., white, male, 19 years. Had a history of four exposures in past two weeks and reported with a purulent urethral discharge and persistent pain and burning. The laboratory report was positive. Treatment was started with St 2 gm. and 1 gm. every four hours. At the end of four days there was no change. Sd was given for four days in the same dosage with no change. St was given for two days 2 gm. every four hours with no change. This patient had heard of potassium permanganate instillations and requested this drug. I gave him the solution of Sa mentioned above and started GCF injections in the forearm. After the second GCF considerable improvement was noted. He became symptom free on the tenth day of this routine. A total of five injections of GCF were given and on the twentieth day his prostate was examined and found normal. A smear was made of the expressed secretion and was reported negative. I could not

*Read before the Warwick County Medical Society, May 9, 1944.

check this patient later as he was a soldier and was transferred.

Case 2. W. D., white, male, 22 years. This patient was brought in by Case 1 and thought that the source of infection was the same. He had been taking Sd 1 gm. four times daily for one week and had noticed no improvement. Laboratory report was positive. St was given 2 gm. at once and 1 gm. every four hours for four days with no improvement. GCF injections and Sa solution instillations were started. Improvement was noted after the second GCF. Treatment was continued for two weeks with five GCF injections. Discharge stopped on the seventh or eighth day. There was no recurrence after a drinking party during the first week after completing treatment. One week after treatment stopped the prostate was normal and secretion negative for pus or organisms.

Case 3. W. R., white, male, 23 years. Reported with typical symptoms and a history of eight prescriptions for large white tablets of two different kinds within the past three months. He had noticed no improvement in the urethritis, but was feeling so badly that he had missed several days from work. The laboratory reported no intracellular diplococci. GCF and Sa solution were started and the patient stated that the discharge stopped the day after the second GCF injection but reappeared the next day when he indulged in alcoholics. This patient was symptom free again on the eleventh day and remained so until his final check-up on the twenty-second day, at which time he was negative in every respect.

Case 4. J. R. F., white, male, 26 years. This patient was an officer at one of the Army Posts and had access to the sulfonamides at the Post Hospital. He had treated himself with Sd in adequate dosage and time schedule for one week and had then tried St for five days with no noticeable improvement. I started this patient on GCF and duosulfon suspension instillations. He could not report regularly for the GCF injections but received a total of four. He became symptom free after the second injection. He continued the instillations for another week and was negative on check-up eighteen days after receiving his fourth GCF treatment. He returned six weeks later prior to a transfer and was negative at that time.

Case 5. S. C., white, male, 27 years. This patient reported with a rather thin urethral discharge which

was reported positive by the laboratory. He had acute gonorrhea five months previously and the discharge stopped after about two weeks of oral St. He had a recurrence of the discharge eight days later and the thin discharge has persisted with occasional two or three day remissions since that time in spite of continued oral sulfonamides. The prostate was markedly enlarged and boggy and the prostatic discharge was thicker than he had been observing. The prostate was gently massaged and the patient given GCF and duosulfon suspension instillations. He received a total of five GCF injections and discharge stopped after third. He continued instillations and massages for one month, at which time prostate was firm and secretion negative. He returned for check-up after four months. Prostate was enlarged moderately and secretion was negative. He reported an occasional morning drop.

Case 6. W. R. O., white, male, 34 years. This patient reported with a history of positive laboratory report for gonorrhea and treatment with only sulfadiazine for two months. My laboratory report was negative. He had a heavy discharge and complained of severe pain at times. He was given St for four days without change. GCF and duosulfon were started and the discharge stopped on the seventh day. Treatment was continued for five GCF injections, at which time he was completely negative.

Case 7. R. S. S., white, male, 20 years. Reported with history of acute gonorrhea of two months' duration. Treated extensively with Sd and St. In spite of treatment had developed orchitis on the left with swelling the size of a large hen's egg. Had been unable to work for past two weeks, so came home for treatment. GCF and duosulfon started and GCF repeated in three days. Patient disappeared for thirty-two days. When he returned there was no discharge and the left testicle was down to almost normal size. There was no pain on pressure along cord or epididymis. His prostate was normal and secretion negative. He had continued instillations.

Case 8. M. H., white, male, 26 years. Patient referred as sulfonamide fast by V. D. Clinic. Purulent discharge of four weeks' duration. Had positive laboratory report at Clinic. Had received St and Sd each for one week without improvement. GCF and duosulfon started. Discharge stopped after second GCF injection. Unfortunately the local supply of GCF was exhausted. Discharge returned

three days later. It was three weeks before more GCF could be obtained. During that time old typhoid vaccine was given, hoping that a reaction to foreign protein would suffice. Nothing was accomplished constructively and his disposition was much worse. When the GCF was available the discharge stopped on the fifth day and the patient received four injections in the second series. He was negative on discharge.

Case 9. J. B., white, male, 33 years. Patient referred by V. D. Clinic with history of onset with positive laboratory report two weeks before. Had received St and Sd each for one week with no improvement. Laboratory report was positive the day he reported to me. GCF and duosulfon started. Discharge stopped two days after first treatment. A total of four injections were given in fourteen days, at which time he was negative. This is the most rapid recovery I have noted.

Case 10. M. G., white, male, 20 years. Patient had acute onset three months before after a three day incubation period. He took nearly two hundred sulfonamide tablets with no change. He reported to the V. D. Clinic where he was found positive and

received one week's treatment with Sd with no change. GCF and duosulfon were started and the discharge stopped on the third day. A total of four GCF injections were given and the patient was negative.

Case 11. W. A. S., white, male, 19 years. Patient reported with purulent discharge, positive report, and a box of Sd which he had been taking six days. St was given on usual schedule with no results in three days. GCF and duosulfon were started. Discharge stopped on fifth day. Patient disappeared after fourth injection, leaving an unpaid bill and an incomplete record.

DISCUSSION.

In my experience, if any sulfonamide given orally for gonorrhea does not produce noticeable improvement in forty-eight hours, it will not cure that given case. Frequently a change of drug will be effective. Neither GCF or duosulfon suspension instillations alone have been effective, but by synergistic action are very successful.

Masonic Temple.

Tantalum to Be Available to Civilian Surgeons.

Tantalum plates, foil, screws and wire to repair broken bones, nerves and skulls will shortly be available to civilian surgeons through a recent allocation of the War Production Board, according to an announcement made by Dr. Gustav S. Mathey, President of the Johnson & Johnson Research Foundation, New Brunswick, New Jersey.

The Johnson & Johnson Research Foundation is a non-profit organization, founded in 1940 to endow research in universities and hospitals and to disseminate summaries of findings to members of the medical profession. Dr. Mathey states that by an agreement between the Ethicon Suture Laboratories, Johnson & Johnson subsidiary, and the Fansteel Metallurgical Corporation of North Chicago, the

availability of tantalum for civilian surgeons is assured at an early date.

Tantalum has assisted surgeons to return to active life many cases which in the last war would have been disfigured and incapacitated for life. Lost portions of the skull, ears, noses and other parts of the face are being replaced with tantalum. One veteran has a tantalum "belly wall". Nerves which control motion in arms and legs are stitched with tantalum thread and protected while healing with tantalum cuffs. Facial paralysis is relieved by small, saddle-shaped pieces of tantalum and wire used to pull the corners of the mouth to a normal position. This stops the unpleasant drooling and facial distortion which go with the condition. Cleft palates also are being corrected.

ECTOPIC PREGNANCY*

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Ectopic pregnancy is a gestation which occurs outside the cavity of the uterus. It may be located in the broad ligament, the peritoneal cavity, the ovary, or any portion of the fallopian tube, including the interstitial portion. The successful treatment of this condition depends to a large degree upon an early and correct diagnosis.

In 1940 we reported¹ some observations on one hundred and fifty consecutive ectopic pregnancies. Today we wish to report sixty-two consecutive cases of ectopic pregnancy treated in The Medical College of Virginia Hospitals during the past three years: 1940, 1941, 1942. These patients have been divided into two groups, according to a new classification which resulted from an analysis of our original report. The first group was admitted with symptoms of an acute rupture of the ectopic gestation. The second group was admitted with low abdominal pain and a pelvic mass, usually unilateral, resulting from a slow hemorrhage or hemorrhage confined within the folds of the broad ligament.

The difficulty one encounters in making a correct diagnosis on these patients is illustrated by the fact that the cases we are reporting were referred to the hospital for admission to the obstetrical, general surgical, genito-urinary, and medical services.

Eighteen patients (29 per cent) were white, and forty-four (71 per cent) were negroes. Thirty-seven (59 per cent) of the cases gave evidence of sudden or acute rupture, and twenty-five (41 per cent) were classified as old ruptures with definite pelvic masses.

PAIN. All of the patients complained of some type of low abdominal or pelvic pain. It was described as cramp-like in 46 per cent of the acute group, and in 68 per cent of the patients with a palpable pelvic mass. Sharp pain followed by fainting was encountered in 38 per cent of the acute cases and in 8 per cent of the patients with a pelvic mass. In the acute group sharp pain, with or with-

out fainting, was complained of by 73 per cent of the patients.

VAGINAL BLEEDING. In the patients with a pelvic mass, vaginal bleeding was observed in 84 per cent of the cases, and in the recent ruptures it occurred in only 65 per cent of the patients. Profuse vaginal bleeding was not observed in either group. Only one patient passed a blood clot larger than a walnut, and she had uterine fibroids and evidence of old, pelvic inflammatory disease. The absence of excessive vaginal bleeding and large clots is an important diagnostic point in ruling out the abortion cases. We have seen two patients² with ectopic gestations in whom the pregnancies continued to grow and remain viable after vaginal bleeding had been observed for several days.

BLOOD PRESSURE. Only one patient in the hematoma group had on admission a systolic blood pressure below 100 mm. mercury, but 24 per cent of the acute group had a blood pressure below 100 mm. systolic on admission. In a different and larger group of cases we found that only 17 per cent of the patients with ectopic gestation presented the classical picture of sudden severe pain, followed by syncope.

PULSE. In the entire series the pulse was above 80 per minute in all except two patients. It was above 90 in 75 per cent of the patients with hematoma. This corresponds with the findings in our first report, in which we noted that the pulse rate was accelerated out of proportion to the elevation of the temperature in patients with ectopic gestation.

TEMPERATURE. In cases with an acute rupture the temperature was below 100F. in 78 per cent of the group, and the temperature remained below 101F. in all of this group. In the hematoma group there were only two patients with a temperature above 101F., and 68 per cent had a temperature which remained below 100F. A slight elevation of temperature is encountered frequently in patients with ruptured ectopic pregnancy of several hours duration.

*Read before the Seaboard Medical Association of Virginia and North Carolina at its annual meeting in Richmond, December 2, 1943.

RED CELL COUNT. Forty-eight per cent of the patients with acute rupture had a red cell count below three million, but only 16 per cent of the hematoma group had such a low cell count.

HEMOGLOBIN. There was a striking comparison in the hemoglobin readings between the acutely ruptured and the hematoma groups. The hemoglobin was below 60 per cent in 59 per cent of the acute group, but below 60 per cent in only 20 per cent of the latter.

WHITE CELL COUNT. Sudden hemorrhage causes leucocytosis, and in the acute ruptures the total leucocyte count was above ten thousand in 70 per cent of the patients, but in the hematoma group it was above ten thousand in only 32 per cent of the cases.

PELVIC EXAMINATION. Pelvic examination should always be done gently, and when pregnancy is present, unnecessary manipulation becomes extremely dangerous. In the presence of ectopic gestation manipulation of the cervix usually causes severe pain. The presence or absence of a palpable unilateral pelvic mass depends upon the duration of the pregnancy, and the amount of hemorrhage or secondary reaction associated with the hemorrhage.

We wish to report in detail on one patient in this series because she had an intra-uterine pregnancy and a ruptured tubal pregnancy at the same time. Following removal of the ectopic gestation she went to term, and seven months after the salpingectomy she was delivered of a full term intra-uterine pregnancy.

L. T. C., a white female, age 30 years, gravida 2, para 1, was admitted to The Medical College Hospital on March 17, 1942, at 9:15 P. M. Her chief complaint was low abdominal pain of two weeks duration, more severe during the afternoon before admission. The last regular menses occurred January 5, two months before admission to the hospital.

History: The patient had one pregnancy four years ago, delivered by classical cesarean section after twelve hours of labor. The convalescence was normal. The operation was performed in another state. She complained of chronic constipation; otherwise the history was negative.

Examination: The blood pressure was, systolic 100, diastolic 60; pulse 80; temperature 99.6F. Urinalysis was normal. Red cell count was 2,620,000; hemoglobin 52 per cent; white cell count 7,900. Pelvic examination: The cervix was soft and the

canal closed; fundus of uterus was anterior, soft, and enlarged to the size of a six weeks pregnancy. Admission Diagnosis: Intra-uterine pregnancy, six weeks; adhesion due to former abdominal operation.

The patient continued to have colicky, cramp-like pains in the right lower quadrant, and on March 21 she had severe, low abdominal pain and a small amount of blood-tinged fluid in the vagina. Pelvic examination revealed the uterus to be anterior, soft, and enlarged to the size of a six weeks pregnancy. There was an indistinct soft mass, the size of an orange, in the right side of the pelvis. This was diagnosed as an ectopic pregnancy.

Operation revealed a ruptured ectopic pregnancy, located in the middle third of the right fallopian tube. There was a hematoma, and pelvic adhesions were rather dense. It was necessary to remove the right tube and ovary. The patient's convalescence was normal and her temperature never went above 100F.

Two weeks later her uterus was enlarging normally, and her convalescence had remained uneventful. She was watched closely, and on October 25, 1942, seven months after the ectopic gestation was removed, she was delivered by cesarean section of a living female child which weighed six pounds and nine ounces. Thirteen days after operation the mother and baby left the hospital in good condition.

The treatment for ectopic gestation is immediate operation. If the patient has lost any appreciable amount of blood, transfusion with whole blood should be started at the time of operation or as soon thereafter as possible. If blood or plasma is not available, intravenous fluids should be given during the operation.

Most of the patients with acutely ruptured ectopic pregnancies, in this report, were given transfusions during the operation or soon thereafter. Only 6 patients, or 25 per cent of those with pelvic masses, needed immediate transfusion.

SUMMARY AND CONCLUSIONS

Sixty-two consecutive cases of ectopic pregnancy with no deaths have been reported.

The importance of a careful and accurate history has been emphasized. The frequent error of considering abnormal or irregular vaginal bleeding as a delayed menstrual period has been discussed.

The pain in this series of cases was cramp-like in 46 per cent of the patients with an acute rup-

ture, and 68 per cent of the patients with a palpable pelvic mass.

The textbook picture of ruptured ectopic pregnancy, with sudden severe low abdominal pain followed quickly by syncope and shock, was observed in less than 20 per cent of the patients in this series.

Slight elevation of temperature, rarely above 101F., is very characteristic of ruptured ectopic gestation.

A leucocyte count above ten thousand is rarely encountered after the rupture has existed long enough for a distinct mass to form. Leucocytosis is frequently seen after an acute rupture of an ectopic gestation.

The importance of differentiating between par-

tial rupture of an ectopic pregnancy with prolonged symptoms and acute rupture has been discussed.

A case of ruptured tubal pregnancy, removed at operation, with continuance to term of a co-existing intra-uterine pregnancy, has been reported.

The treatment for ectopic gestation is immediate operation to control or prevent hemorrhage. Transfusions with whole blood and other supportive measures should be carried out during the operation if there is evidence of hemorrhage or shock.

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Physician Population of the U. S. Increased by 2,570 Last Year.

There were 5,952 additions to the medical profession in 1943, according to the data presented in the forty-second annual compilation of medical licensure and allied statistics by the Council on Medical Education and Hospitals of the American Medical Association and published in *The Journal of the Association* for May 13.

The report says that the number of physicians removed by death in 1943 was 3,382. "It would appear, therefore," the report says, "that the physician population in the United States last year was increased by 2,570. In view of the accelerated curriculum with two classes graduating from most schools in 1943, one might expect that additions to the profession should be considerably higher. This in reality is the case at the present time. However, many physicians who obtained M.D. degrees in December of 1943 were not able to receive licenses until early in the year 1944, owing to administrative details. . . ."

"Estimated figures indicate that on February 1, 1944 the number of physicians in continental United States, including those licensed in 1943, was 186,496. Excluding physicians who are in military

service, engaged in full time hospital work, retired, not in practice or engaged in full time teaching, there remain about 100,000 physicians in private practice, some of whom are part time teachers. . . ."

Throughout 1943, 8,392 graduates were examined for licensure, of whom 7,478 passed and 914 failed. Of 6,427 graduates of approved medical schools in the United States only 1.5 per cent failed. Of 76 graduates of approved Canadian schools, 15.7 per cent failed; of 101 who graduated from approved schools no longer operating, 5.0 per cent failed; of 1,031 graduates of faculties of medicine located in countries other than the United States and Canada, 49.8 per cent failed. There were 38.4 per cent failures among 757 graduates of unapproved schools.

Of particular interest is that portion of the report concerning licensure for relocated physicians. The report says that "Removal of physicians from civilian practice has resulted in a shortage . . . in critical areas, especially in some industrial and rural sections of the country. To assist physicians attempting to relocate in such areas, the licensing boards of fifteen states provide for the issuance of temporary permits or certificates to practice medicine. . . ." A total of 244 such temporary permits were granted by the fifteen states during 1943.

DIAGNOSIS AND TREATMENT OF PRIMARY ATYPICAL PNEUMONIA*

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Recently the widespread occurrence in this country of an epidemic form of nonbacterial pneumonia, described variously as acute influenzal pneumonitis, disseminated focal pneumonia and virus pneumonia has renewed our interest in this respiratory disease.

The essential clinical characteristics of primary atypical pneumonia have been described in a number of publications over the past nine years. Allen, in 1935, analyzed and reported on 50 cases at Fort Sam Houston which conformed essentially to those seen recently, and used the term acute pneumonitis to designate a form of respiratory infection characterized by a benign course, few physical signs, and x-ray evidence of a localized inflammatory process in the lungs.

In 1938, Reimann reported on eight cases occurring in Philadelphia and made studies to determine the etiological agent. These were all negative for the influenza virus A and B, as well as psittacosis virus which is known to produce similar pulmonary lesions. A filterable infectious agent was recovered from the nasopharynx of one and from the blood of another, but evidence that it was actually the cause of the disease was incomplete. He was, therefore, led to regard it as a separate disease entity pending further study. According to British investigators the probability of obtaining the virus diminishes rapidly after the third day, and they also suggest that when the virus attacks the lungs there is less of it in the upper respiratory tract.

Examinations of the sputum in our cases showed the usual nasopharyngeal and upper bronchial flora, such as streptococci viridans, staphylococci, diphtheroids, gram-negative bacilli, and occasionally pneumococci of the higher types, except in one case tubercule bacilli were found where that disease coexisted.

CLINICAL FEATURES

Reports of this disease indicate that there is a wide variation in the intensity of the symptoms, and the diversity of signs in the severe cases, such as encephalitis to the milder respiratory cases, would suggest that no single etiologic factor is in all in-

stances responsible for the disease.

The essential features of our cases were as follows:

1. With or without upper respiratory symptoms and signs.
2. Repeated chills and fever.
3. Sweating profuse.
4. Non-productive cough.
5. Lack of physical signs first 3 to 5 days.
6. Normal leucocyte count and differential.
7. Normal sedimentation rate.
8. Sputum non-specific.
9. Non-responsive to sulfonamides.
10. X-ray evidence.

The discrepancy between the physical signs and the x-ray is marked and the latter is not always characteristic. Diffuse soft mottling fanning out from the hilum and fading into normal lung is the rule, not as dense as lobar pneumonia and may show involvement of one or all lobes simultaneously or successively. The lesion may advance in one portion of lung while regressing at the original site. Resolution as seen by x-ray generally lags considerably behind clinical improvement.

TREATMENT

The treatment of the disease has been entirely symptomatic and therefore quite unsatisfactory. Adequate fluid intake, codeine sufficient to control cough and medicated steam inhalations appear to have some effect in loosening secretions. The sulfonamides, if used at all, are given in the first days as a diagnostic and therapeutic test, and, if there is no response in thirty-six to forty-eight hours and certainly after the diagnosis is established, the drug is discontinued. There is evidence that it may actually do harm if use is continued or used at all.

Due to this unsatisfactory state of treatment and because of the prolonged period of fatigue which disables some cases for as long as four to six weeks, we have endeavored to find more effective means of treatment. Although the results of x-ray therapy of lobar pneumonia are well known, there is little information available on treatment of atypical pneumonia. Oppenheimer has reported on a series of

*Read before the Seaboard Medical Association of Virginia and North Carolina, at Richmond, Va., November 30-December 2, 1943.

56 cases, none of which had responded to medical treatment, and failure to respond to sulfonamide therapy was considered a diagnostic sign. Forty-five were termed cured in three to five days. The remainder were over fourteen days' duration when first treated. According to inquiries made at several institutions, it has not been used so far in treatment of the virus pneumonias.

Accordingly we made a point to treat all cases of primary atypical pneumonia with x-ray therapy since September and we have thus handled twelve cases to this writing. Our cases received 100 r doses daily or every other day depending on severity and response, alternating front and back or alternating sides if both lungs were involved. None received more than the fourth dose and the majority had three. The temperature began to decline after the first treatment, and usually after the second or third dose responded by rapid lysis. One case which was referred after ten days' treatment for an associated sinus infection responded equally well after the second treatment.

With surprising uniformity fever and symptoms subsided and after one or two treatments most of the patients spent their first comfortable night after

days of harassing cough and discomfort. With but one exception all cases were fever free and discharged from the hospital in one week or less. The one exception was complicated by severe diabetes and developed a sterile effusion after treatment which later absorbed and made a normal recovery. No unfavorable reactions occurred in our cases with this therapy. In the presence of leukopenia no further decrease in WBC was observed.

Our investigation is continuing; however, with the cases thus far handled it is our opinion that roentgen therapy is the most effective mode of treatment for control of the cough and fever, and greatly hastens convalescence.

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A Medical Art Show by Minneapolis Public Library.

The Minneapolis Public Library staged a unique art show June 21-July 22, representing the work of leading medical artists the country over. This is part of a program for extending the services of the Public Library to one of the foremost medical centers in the United States, and dramatizing the resources of such departments as the Art, Technical, and Clipping Service.

A display of rare medical books and prints formed an important part of the exhibit. From the library of the Surgeon-General in Washington were four books showing the earliest examples of anatomical drawings, the datelines varying from 1551 to 1682; from the library of Dr. Shirley Miller of the University of Minnesota, a copy of the 1783 Vesalius, and photostatic copies of early anatomies. A copy of the edition of Vesalius, printed from the 1543 plates by the New York Academy of Medicine, was loaned by Modern Medicine.

Blood Donor Service.

"Since its inception (Feb. 3, 1941) the American Red Cross Blood Donor Service has grown from a single center producing 200 bleedings a week to thirty-five centers delivering up to 120,000. In the same period, the nursing staff has increased from four to over 900,—the largest group of nurses employed by the American Red Cross on any single project."

With this introduction, the article *The Nurse and the Blood Donor Service* in the June, 1944, *American Journal of Nursing* discusses the objectives of a blood donor service and the functions of nurses in attaining them.

Since January 1, 1943, no "military eligible" nurses have been employed by the Blood Donor Service. In view of the nursing shortage, attempts have been made to recruit nurses who were not in active nursing and to employ a proportion of nurses in the upper age brackets.

HEALTH AND GOVERNMENT

FRANK L. APPERLY, M.D., D.Sc.,
Medical College of Virginia,
Richmond, Virginia.

Of those who have written about public health problems and especially of their effects on the people as a whole, too many have concerned themselves with special aspects or small fragments of the problems involved, and too few with the fundamental or grass-root bases on which public health depends. The following is an attempt to determine these fundamentals and to stimulate others to do likewise or to define them more clearly.

One of the aims of a civilized community is the attainment of the maximum of freedom and comfort for the individual together with the minimum of interference with the freedom and comfort of others. However, many of the conditions necessary to attain this end cannot be provided by the individual alone, but only by the people acting as a whole, through their representatives and servants, i.e., by government.

One of the greatest factors concerned in the attainment of these aims of civilization is the health of the people. But health is a most complex state, depending on many conditions. Among these conditions are:

A. Certain physical requirements—

- (a) Nutritional standards (involving national and international arrangements, treaties, trade, etc.).
- (b) Facilities for exercise and leisure.
- (c) Physical environment (housing, sunshine, water supply, disposal of sewage, etc.).

B. Certain psychic or "spiritual" conditions—

- (a) Social environment.
- (b) Security from fear and want.
- (c) Educational facilities.
- (d) The "will to health."

These conditions in turn depend ultimately on the people themselves, acting through government, whose function is to plan, regulate and coordinate the activities of the people so that these conditions shall be fulfilled. Some of these conditions, of course, pre-suppose medical knowledge and an efficient medical service, which in turn depend upon:

- (a) Medical education—undergraduate and post-graduate.
- (b) Available medical and scientific knowledge (e.g. libraries).

(c) Medical research.

(d) Absence of economic barriers to the utilization and growth of the above.

All of these again depend upon government, public and private endowment.

From this it would seem that the conditions governing the health of the people depend ultimately upon government, whether Federal, State, or local, since only these agencies can coordinate, and to some extent create, the various conditions enumerated.

When, however, the health of the individual is impaired, it would seem that in such a personal matter he should be free to consult whomsoever he wishes. Even here he is again regulated (and properly) government which provides:

- (a) That if his disease is such as to endanger his neighbors, he is a public health problem.
- (b) That his consultant is one who has had the requisite training, experience and the right to practice his profession.
- (c) The personnel and equipment when the sick person is a member of the armed or essential services, or for reasons of poverty cannot obtain or afford medical attention and is therefore liable to become a danger or a burden to the people. The matter is then one of the general concern. For this reason it is a function of government to see that medical services are available to all, regardless of economic status.

Only when these conditions are fulfilled is a man's illness no longer a public affair, but his own private business. He should therefore be free to consult an expert of his own choice, in exactly the same way as he is free to choose his own lawyer, engineer, or architect, his choice being limited only by distance and by his purse. This is properly the field of private practice.

In conclusion, this brief outline is put forward in an attempt to define clearly the basis or foundation on which plans involving government and medicine must be built. If this basis is accepted, it becomes our duty to educate ourselves, the public and government concerning those matters which pertain to government and those which are properly private and therefore free from governmental interference.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE,
MEDICAL SOCIETY OF VIRGINIA

A 36 year old multipara (Para VII) consulted her physician several times during her pregnancy and her pregnancy was relatively normal. The doctor had delivered some of her previous children, and all the labors had been normal. The patient started in labor at 6 P. M. on March 10. The doctor saw her soon thereafter and gave her 1 cc. of thy-tuitary. He left after examining her and returned at 10 P. M. At this time the membranes were ruptured artificially and 1 cc. of pituitrin was given. The pituitrin (1 cc.) was repeated in one hour. The patient had not made much progress by midnight so she was allowed to rest until the following morning. She was seen again at 6 A. M., March 11. There had been a few pains during the night but the patient had made little progress. The cervix was two or three inches dilated at this time. Forceps were applied under light chloroform anesthesia and an unsuccessful attempt was made to bring down the head. About 10 A. M. a consultant was called and the consultant advised giving the patient more time. Nevertheless, an attempt at forceps delivery was made this time under ether anesthesia. At noon the forceps were again applied, this time without an anesthetic, and again the forceps slipped off. During the day she received 6 grains of sodium amytal and four doses of 8 or 10 minims of pituitrin. At 6 P. M., twenty-four hours after the onset of labor, she was again seen by the consultant. Her labor pains had been irregular and of poor quality. The patient was exhausted and did not look so good. It was therefore decided to send her to the hospital.

She arrived at the hospital at 2 A. M. on March 12, moribund, in shock, pulseless, and cold, temperature 101, pulse 130, respirations 50. There was a pregnancy near term. The vulva was badly traumatized. Her condition was too bad to attempt delivery. The patient was put to bed and external heat applied. In addition 10 per cent glucose in normal saline was given by venoclysis and cardio-respiratory stimulants were administered. The patient died undelivered about 7 hours after admission to the hospital.

It was the opinion of the Committee that this patient had a ruptured uterus, although there was no autopsy to confirm this. Whether the rupture was caused by the oxytocics used or by the attempts at forceps delivery, one cannot say. Either could have caused it, and both were reprehensible. In the history of the case there appears no indication for doing anything to this patient while she was in her home. Whether she could have been saved after she entered the hospital by a blood transfusion and a laparotomy is a question.

The lessons to be learned from this case are two: First, pituitrin is a dangerous therapeutic agent that should rarely be used before the delivery of the baby. If it is used in antepartum, the dose should be extremely small and the patient should be watched for a tetanic contraction. Should this occur, an anesthetic should be administered at once; Second, the use of forceps is contraindicated before the cervix is fully dilated.

Make your reservations for the Medical Society of Virginia Meeting
in Richmond, October 23-25.

PUBLIC HEALTH

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for June, 1944, as compared with the same month in 1943, and for the period of January through June, 1944, compared with the same period in 1943, follows:

	JUNE 1944	JUNE 1943	JAN.- JUNE 1944	JAN.- JUNE 1943
Typhoid and Paratyphoid Fever	11	19	55	70
Diarrhea and Dysentery	640	326	1537	928
Measles	949	1016	16658	8868
Scarlet Fever	103	64	1851	1033
Diphtheria	13	11	116	163
Poliomyelitis	8	3	14	15
Meningitis	24	50	395	640
Undulant Fever	8	4	25	14
Rocky Mountain Spotted Fever	14	8	21	9
Tularemia	7	5	27	29

MORTALITY AMONG SCHOOL CHILDREN

The mortality rate for children of school age (5 to 14 years) is lower than for any other age-group. The low and steadily declining rate, however, may be a misleading health index, as the disabling and crippling diseases which attack children show their effects in the mortality rates of young adults.

Despite the declining rate, deaths of children 5 to 14 years of age in the State last year totaled 510, with a rate of 0.9 per 1,000 population. Twenty years ago, the rate was 1.9, with 1,084 deaths—more than twice the number occurring in the past year.

As a result of the success in the control of communicable and other childhood diseases, the most important cause of death numerically, at the present time, among school children is accidents of all types. There were 99 deaths due to accidents in Virginia in 1943, including falls, burns, drowning, injury by agricultural machinery, and other types. Motor vehicles took an additional death toll of sixty-one

children. Although increasing motor-vehicle traffic during the past two decades has been a great menace to the safety of school children, educational safety programs are proving effective in significantly reducing the death rate for accidents of this type.

Pneumonia and influenza, twenty years ago the leading cause of death among children 5 to 14 years of age had dropped, by 1943, to second place, with 52 deaths. In recent years, the result of advances in pneumonia therapy is seen in the greatly accelerated rate of decline in mortality from this cause.

Although the tuberculosis death rate has decreased so significantly in the past two decades, this disease ranked third among the leading causes of death among school children in the State in 1943. There were 39 deaths attributed to this cause within this age-group.

The fourth important cause of death among children 5 to 14 years was heart disease, with 32 deaths. Of this number 25, or 78 per cent were specified as rheumatic. *Mortality* from rheumatic fever, however, does not begin to indicate the prevalence of this disease among school children because of low fatality rates for the first attack. Due to the high incidence and serious after-effects in later years, this cause of illness and death becomes one of the major health problems of the present day.

Nephritis, as a cause of death among school children, came fifth in rank last year, causing 17 deaths.

In spite of the fact that appendicitis held the same position (sixth) among the leading causes of death in 1943 as it did in 1923 for the 5 to 14 age-group, there was a 68 per cent reduction in mortality during the period. Fourteen deaths resulted last year from this cause in comparison with 44 deaths twenty years ago.

Death rates for boys of school age were consistently higher than those for girls. The ratio of the male rate to the female in the State in 1943 was 1.33.

WOMAN'S AUXILIARY
to the
MEDICAL SOCIETY OF VIRGINIA

President—MRS. W. CLYDE WEST, Alexandria.

President-Elect—MRS. PAUL C. PEARSON, Turpin.

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Treasurer—MRS. REUBEN F. SIMMS, Richmond.

Chairman, Press and Publicity—MRS. E. LATANE FLANAGAN, Richmond.

To the Wives of the Young Doctors.

Many of the founders of the Woman's Auxiliary have already gone on to the great beyond. Those of us who joined the family of doctors' wives a little later than the founders are fast approaching the age of incapacity and the future of the Auxiliary lies in the hands of the wives of the young doctors.

You may not be especially interested; perhaps you have not given it much thought. I'm sure many of you have said that the projects of the Auxiliary are also projects of your other clubs—Parent-Teacher Associations, Woman's Clubs, etc., and you feel that duplication of effort is unnecessary and a loss of time. This is true in part, but would you like to turn over to these organizations the entertainments of the medical societies, the aiding of doctors' families in distress and the requests of your local medical society for services pertaining to their specific needs?

There is something clannish about the Auxiliary. No wives of other professions belong, as in other clubs, and we all have the same interests at heart—the success of our particular doctor, the dignity of the profession, the rights of the individual physician against the inroads of State Medicine and many other common interests. With such singleness of purpose should we not band together and strengthen our purpose by unity?

Most of you have been or will be asked to serve the Auxiliary, local or state, in some capacity. Perhaps you have neither the time nor the inclination and it takes both. Even if you accept you will probably ask yourself why you did it and wish you hadn't. But be patient and put your best into your office or chairmanship, whichever it may be, for the term will not be long and when it is over you will be glad that you met this responsibility. And your husband, even though he may be one of those who is not yet enthusiastic about the Auxiliary, will feel

a secret satisfaction and pride that his wife had a part in carrying on the work.

RUTH PENDLETON HARRISON WILSON,
(MRS. FRANKLIN D.)

Past President, 1937-38.

Leigh-Hodges-Wright Memorial Bed Fund.

In 1936 a resolution was adopted by the Woman's Auxiliary to the Medical Society of Virginia to assume the expense of supporting an "Auxiliary Bed", in one of our state tuberculosis sanatoria, to be used by a physician or some member of a doctor's family. The members of the Advisory Council were much interested in this project and the matter was taken up with those in charge of the sanatoria at Blue Ridge and Catawba, who thought a real service could be rendered by such a plan.

During the first months after the adoption of this plan, the fund was used to assist the daughter of a retired physician, who was then a patient at Blue Ridge. After she had been discharged, we were asked by Dr. Brown to consider a young man who had to enter the sanatorium just one month before getting his degree in medicine at the University of Virginia. The Auxiliary found much real satisfaction and pleasure in being able to render assistance to this young man for a number of years.

In 1938, it was voted to adopt the name, "Leigh-Hodges-Wright Memorial Bed", in honor of the memory of these three physicians who had all been members of the State Advisory Committee.

At the present time, the fund is not being used, though it is available at any time there should be a call for it. Last year it was decided that an effort be made to build this fund up to a worth-while amount with the hope that it may some day become an endowment.

It is a known fact that war always increases the spread of tuberculosis, and it is the hope of the committee that we will be prepared to meet an emergency at any time, should such occur.

ANNE SEAY WRIGHT,

(MRS. FLETCHER J. WRIGHT)

Chairman, Leigh-Hodges-Wright Memorial Bed Fund, and Past President of the Woman's Auxiliary to the Medical Society of Virginia.

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The Treatment of Eclampsia

ECLAMPSIA can be prevented easily by ordinary prenatal care. Nothing in medicine yields such large dividends in health and happiness as the medical supervision of a patient during pregnancy. On the other hand, when this supervision is omitted, a considerable number of women will develop toxemia of pregnancy. This is as certain as taxes and death. In the South where prenatal care is greatly neglected, toxemia of pregnancy is the most frequent cause of maternal death. The treatment of eclampsia which is the terrible climax of untreated toxemia is the most neglected field in medicine.

There are several causes for this neglect. In the first place, the disease is so easily prevented that one has the feeling, subconscious in most instances, that the patient does not deserve the painstaking and troublesome treatment that these patients must have for the best results. In the second place, the disease has become so rare in the teaching centers that the medical students are not taught how to treat it. In fact, the professors of obstetrics themselves seem not to know the best treatment. This was brought out at the recent meeting of the American Gynecological Society. There were two papers on this subject on the program. The first was entitled "The Failure of the Conservative Treatment of Eclampsia", and the second, "Management of Eclampsia; Conclusions Based on 142 Consecutive Cases in a Five-Year Period without Maternal Death". These two papers covered a five-year period, one beginning January 1, 1938, and the other January 1, 1939. This was the only thing that the papers had in common except the continuous administration of oxygen through a nasal tube. The first paper dealt with 51 eclamptics, 37 of which were admitted as emergencies, not having been seen previously by any member of the hospital staff. There were 12 maternal deaths and 18 infant deaths, 23.5 per cent and 35 per cent, respectively. In the 14 patients who received prenatal care in the clinic, there was one fetal death and one maternal death. The latter was treated by cesarean section after she had had one convulsion. She died

8 hours after the operation without showing any signs of responding to the treatment. Thirteen of the remaining 37 cases were classified as severe by Dieckman's criteria. Eleven of these 13 mothers died as did 9 of the 18 infants. The general plan of therapy was "one of conservative medical management in an attempt to control the convulsions and establish an increasing urinary output". For this purpose the author used sodium amytal, supplemented by the administration of 100 cc. of a 25 per cent solution of magnesium sulphate intramuscularly. Twenty per cent glucose solution was given intravenously in amounts of 1,000 to 1,500 cc., two or three times each 24 hours. Continuous oxygen by nasal catheter was given to most patients. The results in the treatment of the severe eclamptics were so poor that this author concludes that it would be better to treat this group by early cesarean section, although apparently he has had no experience to support this claim. He says that the result so far as the mother is concerned could be no worse, and that more babies would be saved. In contrast to this, the second author reported 142 consecutive cases, 36.6 per cent of which were severe by Dieckman's classification, without a maternal death. There was a gross fetal mortality of 24.2 per cent. The conservative treatment that produced such remarkable results consisted of constant and continuous supervision of the patient not only while she was having convulsions but also until she was out of danger. The patient was put to bed in a quiet, darkened room and false teeth, rings, and bracelets were removed. Side boards were used to protect the patient against falls and oxygen was given continuously by nasal tube. Medical and obstetric examinations were deferred until sedation had become effective. Morphine sulphate, gr. $\frac{1}{4}$ and sodium phenobarbital grs. 5 were given hypodermically at once. Fifteen minutes later, if convulsions were still present or if hyperirritability were extreme, 20 cc. of a 10 per cent solution of magnesium sulphate were given intravenously. Sodium amytal was given intravenously in doses of 3 to 6 grains or the morphine was repeated, but the magnesium sulphate was not repeated unless convulsions recurred. The sedatives were used in the smallest possible doses to control the hyperirritability. Five hundred cc. of a 20 per cent dextrose solution were given by intravenous infusion over a period of about fifty minutes. If there were evidence of cardiac failure or pulmonary edema, only 50 to 150 cc. of a 50 per cent solution were given. On the other hand, if there were evidence of dehydration, the patient was given 1,000 cc. of a 5 or 10 per cent solution. The intravenous administration of glucose was discontinued as soon as the patient was able to take sufficient fluids by mouth. Persistent oliguria or anuria associated with such conditions as anemia, hypoproteinemia or hypotension demanded special additional measures, (blood transfusions, plasma transfusions, or diathermy over the kidney region). Twelve patients with marked cerebral irritation were treated by spinal drainage. Venesection was not used. "Although in the presence of acute cardiac failure, drugs of the digitalis group are theoretically of at least temporary value, we have found them of no particular benefit in the few cases in which we have used them." The vasodilator drugs such as *veratrum viride*, the nitrites, and nitroglycerine were not used.

The second author stressed the importance of continuing the constant treatment during the postconvulsive stage. The continuous oxygen is kept up, and the air-passages are kept free from mucous and other material. The head of the bed is still further elevated and the height is changed at frequent intervals. Blood pressure and urinary output are determined at hourly intervals at first and at four hour intervals later. An obstetrical examination is now made and a large dose of magnesium sulphate is given by mouth. Sedation is used in quantities just sufficient to control the cerebral irritation. The patient is encouraged to drink fluids, (sweetened fruit juices, water, coca-cola, milk, coffee, tea or beer). A period of watchful expectancy follows, during which

time the patient is fed a high protein, low salt diet. If the improvement of the patient continues, pregnancy is not interrupted until she has become normal. Medical induction is then started. It may have to be repeated several times. He reserves amniotomy for those cases that do not respond to medical induction. In one instance a cesarean section was done. Operative delivery was held to a minimum. Cesarean section was performed only nine times in the entire series. Local analgesia was used for all varieties of operative work. Nevertheless, in the 104 cases of antepartum and intrapartum eclampsia, there were 3 instances of peripheral vascular collapse, 4 instances of postpartum hemorrhage, 4 instances of persistent anuria, and 4 instances of profound coma. He recommends that 500 cc. of a 20 per cent glucose solution be started as soon as the patient is prepared for delivery, and that it be given very slowly. This measure aids in preventing shock, and obviates the difficulty of entrance into veins if vascular collapse should occur. Morphine is administered as soon as delivery is completed.

Privately, the professors expressed a doubt that 142 consecutive cases of eclampsia could be treated without a maternal death. Our own experience in the past 19 years would indicate that such a result is not impossible. If we eliminate epilepsy, as did the second author, we have a series of 147 consecutive cases of bona-fide eclampsia with 6 maternal deaths. In the treatment of these patients our guiding principles have been: (1) Stopping the convulsions with intravenous magnesium sulphate solution, sodium amytal or veratrum viride, (2) Good nursing care with emphasis on rest, (3) Digitalization of the patient early as a prophylaxis of pulmonary edema, and (4) Fluids by way of the gastro-intestinal tract. Intravenous fluids were given only when oliguria was developing. Purgatives, enematas and lavages were omitted so that the patient could have much needed rest. Between May, 1929, and June, 1943, we had no maternal deaths. Our streak of good luck was broken by our being called in consultation to see a patient in another city, arriving just before the patient died. This patient had received good prenatal care and had showed no signs of toxemia. She developed fulminating eclampsia four and three-quarter hours after a breech delivery under chloroform anesthesia. Her treatment was interesting but hardly conformed to the objectives outlined above. She was treated with epsom salts, calomel, jalap, croton oil, and colonic irrigations. When she had a vascular collapse with pulmonary edema, she was put in an oxygen tent and given digifolin. She did not regain consciousness. Bryant and Fleming who rely upon veratrum viride, intramuscular injections of magnesium sulphate, and 500 cc. of a 20 per cent solution of glucose, and no sedatives to control convulsions, had a series of 140 consecutive cases with 2 maternal deaths, and these were due to infection which followed the induction of labor with bags. Arnell, the second author, emphasizes personal care of the patient so that she gets just the amount of treatment that her case demands and no more, and that seems to be the crux of the situation.

Words We Never Knew Till Now

AFTER a year's lapse the American Medical Association resumed its annual intensive post-graduate course with an attendance of something over 7,000. The sections had capacity audiences. In some there was standing room only. The exhibits also were well attended. They covered the widest range of subjects from how to do a venipuncture to mosquito control in the tropics. The exhibitors talked to constantly assembling groups of avid listeners.

Your editor was impressed among other things with the number of new terms, and

old ones with new uses with which he met. As was to be expected, the nervous and mental group headed the list. He stopped in at their meeting for a moment and was greeted with "indigestible toxic substances of the mind". Just what this is he has yet to learn. The bacteriologists have a way of renaming their pets just as the ordinary practitioner gets used to the old names. Food poisoning is no longer caused by the paratyphoid group of organisms but by the *Salmonella B.*, *paratyphoid A.* or a kindred organism. Of course, that is not really new for they have been talking of the *Salmonella* for several years, but it is hard for an old mind to get used to the new terms. Now they talk of the *Shigella* and the person affected does not have dysentery, but *Shigelosis*. *Muma* is the name that is suggested for the acute form of filariasis, and when the patient has the larvae in the blood stream, he has *filaremia*. This brings to mind that live trichina larvae can be demonstrated on the screen by a *microvivarium*. We heard for the first time of *penicillin-fast bacteria* and we hope sincerely that this proves to be a figment of the imagination.

The renewed interest in vascular disease has developed a crop of new terms, such as *arterial confusion*, *local shock*, and *Homas's sign*. We had heard of the latter before we went to Chicago, but the other two are brand new to us. Then we have a note on *Zudock's syndrome*, but for the life of us we do not know now what it is. We heard again about the *female prostate* that gives such baffling and elusive symptoms in elderly ladies. We learned also that normally a woman towards the end of pregnancy develops a number of *microkaryocytes* in her bone marrow.

One who has passed the American Board of This or That is now spoken of as a *Certificatee*. No doubt we missed a lot of new words although we worked pretty hard from morning to night. The convention was so big that it was hopeless for one to try to cover it adequately. There was one extra-mural word that we learned from the Chicago papers that was quite disturbing. There was an editorial comment on the wording of the Supreme Court's decision that it is unconstitutional to deprive a voter of the privilege of voting for his *rulers*. We were brought up on the doctrine of the sovereignty of the people, and that those we elected to high offices were the servants of the people. At least that is what they used to tell us. This change in mental attitude in Washington is alarming. But in this changing world we must be surprised at nothing.

Floral Eponym (18)

BIGELOVIA

Jacob Bigelow, 1787-1879

BIGELOVIA comprises more than thirty species of western American herbs or low shrubs. The one originally described closely resembles a goldenrod to which *Bigelovia* is very closely related. Dr. Jacob Bigelow, the first of the celebrated Bostonian medical family, was born in Watertown, Massachusetts, the son of a clergyman. He graduated at Harvard, and then went to the University of Pennsylvania where he received his medical degree in 1810. Returning to Boston, he became the partner of Dr. James Jackson. In middle life he was visiting physician to the Massachusetts General Hospital and Professor of Materia Medica at Harvard. He was one of the first to insist on the self-limited character of disease and worked for a reform of medical education. Music, modelling, and botany were his refreshment. He wrote *Florula Bostoniensis*, and *Medical Botany of the United States*. The latter is a three volume work, beautifully illustrated, which is now quite rare.

Societies

Northampton County Medical Society.

This Society, at a recent meeting, elected delegate and alternate to the State meeting to be held in Richmond in the Fall, and voted to discontinue participation in the medical insurance scheme for borrowers from the Farm Security Administration.

Dr. J. M. Lynch of Cape Charles and Dr. W. C. Henderson of Nassawadox are president and secretary, respectively, of this Society.

The Patrick-Henry Medical Society

Held its regular quarterly dinner meeting in Martinsville on July 7. After a short business meeting a very interesting talk followed by discussion was

given and led by Dr. Roger H. DuBose of Roanoke. His subject was "Fluids in Children".

Dr. R. H. Walker is president of this Society and Dr. T. H. Dickerson, secretary. Both are of Martinsville.

Fauquier County Medical Society.

At a meeting of this Society on July 13, the following officers were all re-elected for the coming year: President, Dr. Stewart McBryde, Manassas; vice-presidents, Drs. George H. Davis, Warrenton, and Wade C. Payne, Haymarket; and secretary-treasurer, Dr. J. Frank Folk, Warrenton. Delegate and alternate to the State Society meeting were also named.

News

Re-appointed State Health Commissioner.

Governor Darden has announced the re-appointment of Dr. I. C. Riggin as State Health Commissioner of Virginia for another term of four years, effective July 1. Dr. Riggin has been serving in this position since July, 1937, when he was named to succeed Dr. Warren F. Draper who was recalled to service with the U. S. Public Health Service after having been loaned to this State.

Superintendent at State Colony.

Dr. Carl W. White has been appointed superintendent of Lynchburg State Colony, succeeding Dr. G. B. Arnold. Dr. A. D. Hutton, who has for several months been acting superintendent, has returned to Marion. Dr. White is a native of Danville and received his medical education at Jefferson Medical College, Philadelphia, and was recently an assistant physician at Rochester State Hospital, in Minnesota.

News from the University of Virginia.

On Tuesday, May 16, Dr. W. W. Waddell gave a lecture before the West Virginia State Medical Association, meeting in Wheeling, on the subject, "Recent Improvements in the Treatment of Purulent Meningitis".

Dr. Dudley C. Smith attended meetings of the

Society for Investigative Dermatology, American Dermatological Association, and American Medical Association in Chicago, June 12 to June 22. He was elected Vice-Chairman of the Section on Dermatology and Syphilology.

Dr. Samuel A. Vest presented a paper at the meeting of the American Medical Association in Chicago in June on "An Inspection Lens-Sheath as an Aid to Transurethral Resection".

At the meeting of the American Urological Association in St. Louis in June, Dr. Vest spoke on the subject "Should Nephroureterectomy Be the Routine Procedure in Tumors of the Ureter?" and conducted an exhibit on conservative surgery of the ureter.

Dr. Vincent W. Archer, Professor of Roentgenology, served as chairman of the Committee on Awards, Scientific Exhibits, during the meeting of the American Medical Association in Chicago, June 13 to 16.

American Medical Association.

Dr. Herman L. Kretschmer, Chicago, succeeded Dr. James E. Paullin, Atlanta, Ga., to the presidency at the annual meeting of the Association held in Chicago, June 13-16. Dr. Roger Irving Lee, Boston, was named president-elect.

There was a registered attendance of 7,284. The following attended from Virginia:

Dr. Mallory S. Andrews, Norfolk.
 Dr. Vincent W. Archer, University.
 Dr. W. A. Barker, Roanoke.
 Dr. Arthur S. Brinkley, Richmond.
 Dr. W. E. Butler, Norfolk.
 Dr. W. H. Copley, Richmond.
 Dr. W. Gayle Crutchfield, University.
 Dr. Donald S. Daniel, Richmond.
 Dr. J. Wyatt Davis, Jr., Lynchburg.
 Dr. J. H. Deyerle, Harrisonburg.
 Dr. W. K. Dix, Richmond.
 Col. M. F. DuFrenne, Ft. Myer.
 Dr. W. C. Elliott, Lebanon.
 Dr. Joseph E. Feingold, Roanoke.
 Major Gregory G. Floridis, Camp Pickett.
 Dr. R. W. Fowlkes, Richmond.
 Dr. Emily Gardner, Richmond.
 Dr. John J. Giesen, Radford.
 Dr. Hugh Griffin, Clinchco.
 Dr. R. Bryan Grinnan, Norfolk.
 Dr. Harvey B. Haag, Richmond.
 Dr. Edwin A. Harper, Lynchburg.
 Dr. E. C. Harper, Richmond.
 Dr. C. C. Hatfield, North Holston.
 Lt. Col. Edmund Horgan, Delaplane.
 Dr. J. Shelton Horsley, Richmond.
 Dr. William S. Hotchkiss, Norfolk.
 Dr. K. W. Howard, Portsmouth.
 Dr. J. Morrison Hutcheson, Richmond.
 Dr. Jeannette M. Jarman, Hot Springs.
 Dr. M. B. Jarman, Hot Springs.
 Dr. E. S. Jones, Hampton.
 Dr. Frank A. Kearney, Hampton.
 Dr. Linwood D. Keyser, Roanoke.
 Dr. Edward W. Kunckel, Richmond.
 Dr. J. W. Love, Alexandria.
 Dr. Eugene L. Lowenberg, Norfolk.
 Dr. Walter B. Martin, Norfolk.
 Dr. W. Ambrose McGee, Richmond.
 Dr. Carl W. Meador, Richmond.
 Dr. E. B. Mewborne, Newport News.
 Dr. H. B. Mulholland, University.
 Dr. Thos. W. Murrell, Richmond.
 Dr. B. W. Nash, Timberville.
 Dr. R. B. Newman, Newport News.
 Dr. B. L. Parrish, Norfolk.
 Major E. A. Pushkin, Camp Pickett.
 Dr. Samuel B. Pope, Norfolk.
 Dr. Wm. R. Pretlow, Warrenton.
 Dr. I. C. Riggin, Richmond.
 Dr. H. L. Riley, Jr., Lynchburg.
 Dr. M. P. Rucker, Richmond.
 Dr. J. W. Sayre, Newport News.
 Dr. D. C. Smith, University.
 Dr. H. C. Spalding, Richmond.
 Dr. James B. Stone, Richmond.

Dr. E. L. Stubbs, Newport News.
 Dr. E. H. Terrell, Richmond.
 Dr. A. E. Tureman, Richmond.
 Dr. A. W. VanLandingham, Langley Field.
 Dr. Samuel A. Vest, University.
 Dr. Thos. M. Vorbrinck, Norfolk.
 Dr. W. W. Waddell, Jr., University.
 Dr. R. H. Walker, Martinsville.
 Dr. K. K. Wallace, Norfolk.
 Dr. T. J. Williams, University.

Married.

Dr. George Hatcher Snead, Richmond, and Miss Anne Hurtt Ross, Onley, June 28th. Dr. Snead is an alumnus of the Medical College of Virginia.

Major John Tabb Walke, MC., U.S.A., and Miss Evelyn Chamblin Murrell, both of Richmond, July 6. Major Walke is a graduate of the Medical College of Virginia, class of 1940. He has recently returned from overseas duty in the Indo-china area.

Dr. Ashby Turner Richards, Harrisonburg, and Miss Evelyn Rosaline Suter, Staunton, June 14. Dr. Richards is a graduate of the Medical College of Virginia, class of December, 1943, and is now serving his internship at the U. S. Marine Hospital in New Orleans.

Lt. Joe Lee Frank, Jr., MC., AUS., Richmond, and Miss Barbara Olive Bloxam, Roxboro, N. C., July 14th. Lt. Frank is a graduate of the College of Physicians and Surgeons of Columbia University, New York.

McGuire Hospital to Be First Stop Casualty Base.

The new 1800-bed McGuire Hospital in Richmond will act as a receiving hospital for casualties from the European and Mediterranean war theatres. Urgent medical attention will be given and, after a short stay, evacuees will be reassigned to hospitals nearer their homes. Woodrow Wilson Hospital in Staunton will handle neuropsychiatric cases "if it specializes in anything". To make room in the general hospitals, army station hospitals at Ft. George G. Meade, Md., and Camp Lee, Va., have been designated regional hospitals for the ASF. They will perform the same service as general hospitals but for men assigned to the zone of the interior, i.e., posts in this country. The Lee Hospital may also receive any overflow from McGuire.

Dr. Nelson Mercer,

Blacksburg, has been named chief medical officer in the tuberculosis division of the Gallinger Mu-

nicipal Hospital in Washington. He succeeds Dr. Charles P. Cake who resigned early this year. Dr. Mercer is a native of Richmond where he practiced for sometime before going to Chestnut Hill, Pa., where he was resident physician at the Home for Consumptives. For the past year he has been medical officer at Virginia Polytechnic Institute.

Physician-Artists' Prize Contest.

The American Physicians Art Association, with the cooperation of Mead Johnson & Company, is offering an important series of War Bonds as prizes to physicians in the armed services and also physicians in civilian practice for their best artistic works depicting the medical profession's "skill and courage and devotion beyond the call of duty".

Announcement of further details will be made soon by the Association's Secretary, Dr. F. H. Redewill, Flood Building, San Francisco, Cal.

Dr. Huston St. Clair,

Tazewell, has been named chairman of the vocational education study committee of the State School Study Commission. He has also accepted the State chairmanship of the Committee for Economic Development of the CED.

Dr. C. L. Riley,

Winchester, having recently successfully passed the examinations given by the American Board of Obstetrics and Gynecology, has received notice of certification by the Board.

Dr. Riley is now a Lieutenant in the Medical Corps, USNR, and is stationed in Richmond.

Second Annual Summer Clinic.

The Fourth District Medical Association and the Southampton County Medical Society were sponsors of the second annual summer clinic held at the Raiford Hospital, Franklin, on July 26. The program was as follows: The Use of the Different Insulins in Diabetes by Dr. William R. Jordan; Advancements in Pharmacology—Penicillin and New Sulfonamides by Dr. Harvey Haag; and Tropical Diseases: Our New Responsibilities by Dr. Harry H. Henderson. All speakers are of Richmond.

At the Clinic to be held on August 30, there will be a symposium on Pediatrics, and on September 29, the discussion will be on Endocrine Problems.

The American Gynecological Society

Held its annual meeting at Hotel Hershey, Hershey, Pa., the latter part of June, a very interesting

program being presented. The presidential address by Dr. George W. Kosmak of New York City was entitled "The Place of Woman in the Changing World". In the business session, Dr. Edward A. Schumann of Philadelphia was elected president; Drs. Norris W. Vaux of Philadelphia and James C. Masson of Rochester, Minn., vice-presidents; and Dr. Howard C. Taylor, Jr., of New York and Dr. Philip F. Williams of Philadelphia, secretary and treasurer, respectively. Time and place of the next meeting to be announced later.

International College of Surgeons.

The program of the Ninth Annual Assembly of the United States Chapter of the College will be devoted to War, Rehabilitation and Civilian Surgery. The sessions will be held at the Benjamin Franklin Hotel in Philadelphia, October 3-5. The convention opens on the morning of the 3rd and in the evening "Service Night" will be held at which time the guest speakers will be prominent members of the Army, Navy and Veterans Administration. More than fifty prominent surgeons and others engaged in the work of rehabilitation and occupational therapy will present twenty-minute papers during the morning and afternoon sessions. There will also be a tour of hospitals and attendance at clinics. Outstanding scientific exhibits are planned and more than 250 feet of panel space has been set aside for them.

The medical profession is invited to attend the Assembly and its sessions. Information with regard to hotels, etc., may be obtained from Dr. Benjamin Shuster, Philadelphia.

Dr. R. Finley Gayle,

Richmond, was elected to membership on the National Committee for Mental Hygiene at the meeting of the Board of this organization in New York City, early in June.

American College of Chest Physicians.

At the annual meeting held in Chicago, June 10-12, Dr. Dean B. Cole, Richmond, was re-elected as a Governor of the College for a term of three years. Others who attended from Virginia were: Drs. R. H. Walker, Martinsville; R. B. Grinnan, Jr., Norfolk; and E. C. Harper, Richmond.

Promotions in the Service.

The following promotions for our members in the Service have recently been noted:

Dr. Harry J. Warthen, Jr., Richmond, to Lieutenant Colonel, U. S. Army.

Dr. H. B. Yeatts, Danville, to Lieutenant Commander, U. S. Naval Reserve.

Dr. D. Coleman Booker, Richmond, to Captain, U. S. Army.

Dr. C. B. Bowyer,

President of the Medical Society of Virginia, who was recently confined to Johnston Memorial Hospital, Abingdon, on account of illness, has improved sufficiently to return to his home at Stonega, and is resuming his work by degrees.

Dr. William L. Davis,

Recently of Norfolk, is now engaged in special work at the Margaret Hague Maternity Hospital in Jersey City, N. J.

Medico-Legal Conference and Seminar.

I. Conference

The Massachusetts Medico-Legal Society in conjunction with the medico-legal departments of Harvard, Boston University and Tufts Medical Schools has arranged for an all-day conference to be held at the Mallory Institute of Pathology, Boston City Hospital, on Wednesday, October 4, 1944. It will include lectures, demonstrations, and informal discussions concerning many subjects in legal medicine, particularly stressing some of the more recent procedures. This meeting will be open to any registered physician, lawyer, police official, senior medical student or other medical investigator who may be interested and care to register. No limit in number has been made. There will be no fee for registration. While advance application is not essential, it would be helpful to those arranging the conference if notice of intention to attend be sent prior to October 1 to Dr. W. H. Watters, Department of Legal Medicine, Harvard Medical School, Boston.

II. Seminar

The Harvard Medical School, Courses for Graduates, with the co-operation of the Medical Schools of Boston University and Tufts College offers a seminar in Legal Medicine to occupy the entire week of October 2-7, inclusive. It is planned particularly for medical examiners and coroners physicians but will be open to any other suitable graduate of an approved medical school.

The course will be practical rather than theoretical and will consist of autopsy demonstrations, tech-

nique and interpretation of laboratory tests, study of the day-by-day cases of a medical examiner, round table conferences, and the many subjects now included in the widening field of legal medicine. In order that each participant may receive the maximum benefit, the enrollment has been limited to fifteen. For the seminar the fee is \$25. Application should be made on or before October 1 to Harvard Medical School, Courses for Graduates, 25 Shattuck Street, Boston 15, Massachusetts.

Wanted.

Registered technician for office work. Hours 9-5, Thursday and Saturday afternoons off. No night nor Sunday work. Salary \$200.00. Reply, with references, to "LFH", care this journal, 1200 East Clay Street, Richmond 19. (Adv.)

Obituaries

Dr. William A. Harris,

Prominent physician of Spotsylvania, died May 25. He was sixty-six years of age and a graduate of the Medical College of Virginia in 1901. Dr. Harris served for three terms in the General Assembly as a delegate from Fredericksburg and Spotsylvania County. He was formerly county coroner, secretary of the Board of Public Roads, and County Health Officer, as well as a member of the Board of Visitors of VPI. Dr. Harris was a member of the Medical Society of Virginia. His wife and several children survive him.

Dr. William Alexander Lambeth,

A member of the faculty of the University of Virginia for more than forty-five years and a leading figure in Southern and intercollegiate athletics, died June 24. He received his medical degree from the University of Virginia in 1892 and served as professor of materia medica and hygiene and as head of the department of physical education and director of athletics. Dr. Lambeth was widely known for the thirty years he guided Virginia athletic teams to national prominence. He had served in national and international athletic organizations.



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Virginia

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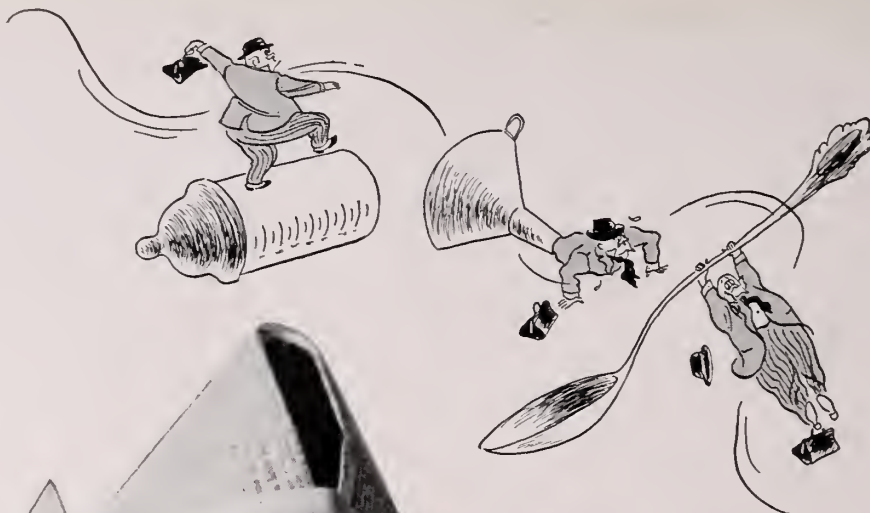
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Program Issue
Medical Society of Virginia

September 1944



**"MY DOCTOR'S FOUND A
WAY TO GO
ALL-OUT . . .
WITHOUT FEELING
ALL IN!"**

"MY DOCTOR certainly hated figuring and re-figuring proportions of milk, carbohydrates, water for feeding formulas.

"Then he looked into S-M-A. And I was on S-M-A—as soon as he saw what a dependable way it was to shortcut that old arithmetic. In only two minutes he explained to my Mummy how to mix and feed my S-M-A.

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S-M-A is derived from tuberculin-tested cows' milk, the fat of which is replaced by animal and vegetable fats, including biologically tested cod liver oil, with milk sugar and potassium chloride added, altogether forming an antirachitic food. When diluted according to directions, S-M-A is essentially similar to human milk in percentages of protein, fat, carbohydrate, ash in chemical constants of fat and physical properties.

Everybody's **HAPPY IF IT'S AN**  **BABY!**

REG. U. S. PAT. OFF.

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RICHMOND, VA., SEPTEMBER, 1944

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Guest Editorial

The Richmond Meeting of the Medical Society of Virginia
October 23-25, 1944

THE question uppermost in the minds of all, when the matter of holding professional meetings is discussed nowadays, is whether or not they are justified during this wartime period. Those who have given this matter special study, in regard to medical meetings, all seem definitely to agree that it is highly important from the standpoint of maintaining medical efficiency during the present emergency, as well as caring for future medical needs, that such meetings be held with some regularity. When one reflects on the mass of new important information made available at such meetings through both formal and informal discourse, it is hard to conclude other than that these gatherings serve to profit well the nation, the public, and the physician. They should be conducted, however, in such a fashion as to infringe to a minimum on wartime economy, and it is with this sense of obligation that medical meetings, both local and national, are contemporarily being held. And it will be with this sense that the annual meeting of the Medical Society of Virginia will be held in Richmond on October 23-25 of this year. The John Marshall Hotel will serve as headquarters, and most of the meetings will be held there.

Elsewhere in this issue of the MONTHLY is listed the tentative program of the coming meeting, and it is sincerely hoped that as many members as may find it possible to do so will attend and participate in the important sessions to be held. The medical personnel of the various Army and Navy units in Virginia are most cordially invited to be present and share in the various discussions.

May we urge that all those who contemplate attending secure their hotel reservations as soon as possible. If reservations are not to be used, they should be canceled promptly. Although the meeting will be held in the early part of the week when hotel space in Richmond is not at such a high demand as during weekends, nevertheless, failure to cancel a reservation in time may mean severe inconvenience to a fellow physician.

The Richmond Academy of Medicine and the City of Richmond are proud to be hosts to the Medical Society of Virginia and its guests at the coming meeting and will do their utmost to make the stay of the attending physicians pleasant, informative, and memorable. And with the prayer that ere we meet again the sunlight of peace will have permanently dissipated the prevailing black clouds of war, and we will have back in our fold once more those colleagues whom we so highly cherish and who have and are serving all of us so unstintedly and valiantly.

Once again in closing, if you can, come. It will be the pleasure of the Richmond physicians to welcome you!

HARVEY B. HAAG, M.D., *Chairman,*
Committee of Arrangements.

THE RECENT ADVANCE IN NAVAL MEDICINE*

J. J. A. McMULLIN, REAR ADMIRAL, M.C., U.S.N.,
District Medical Officer,
Headquarters Fifth Naval District,
Naval Operating Base,
Norfolk 11, Virginia.

Tonight in choosing my topic, that of advances in Navy Medicine in recent years, I am well aware that the term "Navy Medicine" which embraces the facilities and techniques of the four major organizations under the control of the Bureau of Medicine and Surgery—namely, the Medical Corps, Dental Corps, Navy Nurses Corps, and the Hospital Corps—is a large and comprehensive subject. However, in this discussion, I am limiting technical details and will skeletonize as much as possible the subject material in hand.

The history of Navy Medicine goes back to that day in 1775 when First Lieutenant John Paul Jones nailed the ensign to the masthead of the *Alfred* in Philadelphia and, when that band of American seamen took to sea, there went with them the first Ship's Surgeon, Dr. Joseph Harrison, who, as the records say, served nobly and well.

It is a far cry from those days to Navy Medicine as we know it today. The Bureau of Medicine and Surgery was founded in 1842 and brought about the first standardized practices of Navy Medicine. From that day to the more specialized times of the first World War, many advances have come from the research and clinical observations of Naval Medical Officers in the various specialized branches of preventive and curative medicine. Navy Medicine today is to its counterpart of World War I what the old *USS New Jersey* is to the new *USS New Jersey*.

The Navy doctors in the performance of their professional duties know no boundaries between the wardroom and the forecabin, and they minister to Admirals and seamen alike. With that in mind, it is easier to understand that the Navy Medical Corps can plan broadly and minister soundly to those under their care.

What is often referred to as "the miracle of Pearl Harbor" is not indeed a miracle at all, but a monument to the preparedness and thoroughness, and the vision and foresight with which the Bureau of Medicine and Surgery and Medical Officers afloat and

ashore planned for the possibilities of the present conflict.

Everyone knows the history of this first large-scale test of the Navy's Medical Corps in World War II. The newly developed blood plasma and sulfa drugs were at hand to aid in meeting the emergency. Morphine syrettes were available to alleviate the suffering of the burned and the injured. Adequate supplies, equipment, and personnel demonstrated the foresight in planning for this first battle test. Many battle tests since the 7th of December, 1941, have demonstrated again and again the skill, the valor, and the patriotic zeal of our doctors, nurses, hospital corps officers, and men.

The lessons learned at Pearl Harbor in the care and prevention of casualties were many and varied. First of importance was the fact that new warfare techniques of bombs and high explosives brought about an unprecedented number of flash burns. Protective clothing was designed as a consequence, and intensive research into the most advanced methods for the treatment of burns was instituted. From Pearl Harbor came fresh new knowledge of the prevention and treatment of blast injuries, and the prevention of total losses of medical stocks by wide dispersion of supply points.

It was my good fortune to take command of the Pearl Harbor Hospital on February 20, 1942. The situation there, I can assure you, was tense until after the Battle of Midway—June 6-7—when the Japanese were so decisively defeated and our defenses so much improved we felt that any subsequent attempt to seriously threaten any of our possessions in the Hawaiian Sea Frontier would be repelled with greater enemy loss of ships, planes, and men than the Japanese suffered in their attempt to take Midway. I inspected Midway a few days after the battle, and from officers and men heard nothing but praise for the doctors and hospital corpsmen who administered to the wounded.

Following the Battle of Midway, a number of patients suffering from immersion blast injuries were admitted to the Pearl Harbor Hospital. A series of

*Read before the Roanoke Academy of Medicine, April 3, 1944.

experiments upon animals were conducted by members of the staff, which brought to the profession the first accurate knowledge of the bio-physical phenomena involved in this type of Naval casualty. An accurate study of the pathology was made and an outline of the treatment, both conservative and surgical, was described. The research workers at the Naval Medical Center in Bethesda also performed animal experiments at the same time, and our observations and conclusions were essentially the same as theirs, although the investigations were conducted independently in institutions separated by 5,000 miles of land and sea. This is a convincing evidence of the scientifically accurate observations and conclusions of both groups of investigators.

When the Navy was called upon to expand in 1940, the Medical Department felt the effects immediately. The once adequate force of physicians, surgeons, dental officers, and specialists had been maintained on the basis of peacetime and the limited national defense program. A few facts as to the size of the Medical establishment would not be amiss at this point. In July, 1940, there were 14 well-equipped and well-staffed continental U. S. Naval Hospitals and 3 outside the continental limits. In January, 1944, the corresponding figures were 41 and 6, respectively, and overseas 9 base hospitals and at least 12 mobile hospitals are in commission. Three more hospital ships were being readied for active duty and are now in action. In addition, there are approximately 400 dispensaries operating in conjunction with continental shore activities.

While previous plans were based mainly upon the needs of supporting a single theater of war, the change to a global theater was not as much a problem as the new factors of war which called for new techniques. The problems of amphibious operations, long supply lines, diseases current to far-flung fields of battle, and the new and terrifying wounds caused by present-day explosives called for entirely new techniques. Experiences in World War I were studied and weighed and combined with more recent data, such as that obtained from the Italian conquest of Ethiopia and the lessons of the Spanish Civil War. In the course of these investigations and with the knowledge that this would be indeed a war of mobility rather than the trench type of World War I, the Navy realized that a new type of Naval Hospital was required. As a result, the

present Navy mobile hospital was designed and built. To the Surgeon General, Vice Admiral Ross T. McIntire, goes the credit for the adoption of the types of mobile hospitals which have been operating so successfully in combat zones, especially on certain islands in the Pacific Ocean.

These hospitals are designed primarily with the thought in mind that they can be assembled rapidly and, when necessary, knocked down and moved to a more advanced position. These mobile hospitals can be carried on ships and transported to sites accessible to the fighting fronts. Each hospital ship, in addition to its adequate facilities within the ship, carries a complete mobile hospital unit pre-fabricated and ready for immediate use.

Supply problems to maintain these hospitals likewise required changes. Many of the ordinary items of use for the care and prevention of diseases became unavailable with the occupation of various countries. For a time, before other supply points such as South American could be developed, it appeared that the lack of sufficient quinine would prove a hardship in treating the many cases of malaria which came from Pacific warfare. However, atabrine and other synthetic drugs have most effectively supplemented quinine in the suppression and treatment of malaria. I believe that these problems of supply and dispersion have, in 1944, reached new heights of efficiency.

The terms "aviation medicine", "flight surgeon", and "medical parachutist" were, for instance, unheard of in 1917-18. Today, aviation medicine, a new and fascinating subject, has come into being to put the selection of fliers on a sound basis and to maintain their fighting fitness. The Navy's flight surgeons are constantly with the aviators to whom they are assigned, caring for them, flying with them, living with them, and watching over them solicitously. Our Navy flight surgeon knows the fliers' problems first-hand, for he is also a flier. Medical parachutists are with the fleet Marine Forces and make leaps with their men.

The Low-Pressure Chill Chamber, the use of liquid oxygen, pressure breathing, electrically heated suits, protective flak suits and helmets, the use of the dark adaptometer for accurate selection of men for night missions, anti-blackout suits for dive bombers, the classification of men for resistance to aeroembolism, studies in physical characteristics of the atmosphere, and the rehabilitation of pilots suf-

fering from operational fatigue are just a few of the problems our flight surgeons have solved or with which they are currently concerned.

The screening of recruits for tuberculosis with 35 mm. x-ray films, and the screening of neuropsychiatric conditions in recruits have eliminated large numbers of these classes of ineffectuals from the service.

Special emphasis should be placed on preventive and tropical medicine. Training activities and field work have been undertaken to prepare for the control of malaria and epidemics; sanitation methods have been improved; venereal disease control measures, including special agreements between Army, Navy, Public Health Service, and civilian agencies, looking forward to the abatement of venereal diseases in the services and in civilian communities have been accomplished with gratifying results. A signal reduction in the incidence of venereal disease has been brought about by the elimination of the public's "hush, hush attitude" and by frank and explicit advocacy of the best means of prevention and treatment.

Plastic and reconstructive surgery, which were in their infancy at the time of the Armistice, are working wonders for our casualties of today and will be significant factors in returning untold numbers of men to gainful occupations, instead of being hopeless casualties when the war is won. The rehabilitation program for the war-injured is being considered on a broader basis than in any war in history. This part of the program, involving as it does the best possible medical, surgical, and neuropsychiatric therapy supplemented by physiotherapy and occupational therapy, has always been a policy of the Navy. These facilities will be extended in scope and made available to all casualties.

In defending the Philippines, several new problems were encountered, and in the retreat from the Netherlands East Indies additional invaluable battle experiences were gained by the Medical establishment. Problems in evacuating casualties under fire and while being subjected to air attack were met. Medical officers of ships that had been sunk in battle gave detailed reports, and from the voluminous material obtained, new techniques and procedures—which we now use as everyday treatments—were formulated. During the withdrawal operations which were so numerous in the early days of the struggle, the Medical Department had its activi-

ties greatly complicated. Under retreating conditions shore bases and hospitals had either been sacrificed or placed so far in the rear as to lose most of their effectiveness. Sickbays and facilities on shipboard were the only havens for the wounded in many cases—and these, being in the very midst of the engagements and often subjected to heavy seas, were not ideally conducive to the convalescence of the more seriously ill or wounded.

The lessons of previous engagements proved valuable during the Coral Sea, Midway, and Dutch Harbor actions. Preparations for the widespread treatment of burns had been made and medical supplies had been stored in widely separated locations, chiefly underground. Air transport of supplies and evacuation by air of casualties were widely used at these points. Mobile and advance base hospitals, ranging in size from 10-bed dispensaries under canvas to units having a capacity up to 3,000 patients, were used in these and later engagements.

Shortly thereafter, the Navy conceived the idea of acquiring large hotel properties and estates to be used as convalescent hospitals. It was hoped that the use of these convalescent hospitals would insure a greater percentage of permanent recoveries and rehabilitation among our war injured and would relieve continental Naval hospitals from providing rooms for convalescent cases. We have seen the wisdom of this preparedness.

Submarine medicine, which is little heard of, has become increasingly important in a war which finds the submarine vying with the aircraft in far-flung attacks. Submarine medicine devoted much time to questions of diet, protective clothing, air conditioning, the use of sun lamps, alleviation of vitamin deficiencies, combating of heat fatigue, and the use of neuropsychiatry, especially in the selection of personnel.

In the landings of the Solomons, every unit of Marine Corps or Naval personnel had its medical officers and hospital corpsmen who advanced with the troops. The assurances given to the men that they would be treated on the firing line has been estimated as resulting in an effectiveness of almost a third greater than might otherwise have been expected. Even little aids, such as a new casualty tag which would indicate at a glance the previous treatment and condition of the casualty, were the outcome of these proving grounds.

In the Pacific, we have found that malaria and

jungle fevers proved to be in many cases greater dangers than the Japanese. The mounting casualties from malaria convinced the Medical Department that standard methods of treatment in use at the beginning of the war—even if sufficient quinine could be obtained—were not sufficient. Individual protection by means of special clothing, insect-repelling creams and lotions, insecticides, and suppressive drugs were supplied. It was found that great stress must be laid upon the proper protection of individuals, and, coupled with protection of individuals, the Medical Department aided in selecting camp sites so as to avoid malaria dangers insofar as would be practicable. Drainage of swampy areas was carried out by the sanitation section of the *Seabees* under the direction of medical personnel. All standing water was treated to kill mosquitos, and tents and buildings were screened. Special highly efficient spray bombs, including those utilizing freon—which previously had been used in air conditioning and home refrigerators—were given widespread use.

Prosthetic dental facilities and means for the repair and replacement of eyeglasses became necessary due to changed standards of recruiting which was bringing older men into many branches of the Navy. To cope with these problems, Special Optical Repair Units and Prosthetic Dental Units were developed and sent into the field.

Fresh water has always been one of the most critical items at sea, and new methods of purifying water, both at sea and at advanced bases, were placed in service. A simple chemical method of obtaining fresh water from sea water has been developed by research workers at the Naval Medical Center, Bethesda, and has proved practical and successful. Proper equipment and instructions for catching fish and, incidentally, rain water have been issued to men adrift at sea.

In addition to heat, the Navy has had to face the problems of cold. Such problems as frostbite and Arctic pulmonary and bronchial disorders had to be faced. Long tours of Alaskan duty and the reoccupation of Attu and Kiska brought about certain new operational problems. The development of protective clothing for men facing high seas and low temperatures was the outgrowth of Medical Department research. There were, however no crises met in the Arctic which would equal in severity those of the South Pacific.

Invasions, such as those of Africa and Italy, required special organization. Here, however, existing facilities were more readily converted to our use. In the invasions of Sicily and Italy, new evacuation facilities for casualties were evolved. Combat craft, especially the ever-useful LST's with their large space below deck, were pressed into service as ambulance ships to transport wounded to Africa. As a result of this preliminary work, the Navy is better prepared to care for the even greater demands which will be made upon these evacuation facilities when the attack is made in force upon the European continent.

Despite heavy offensive action during the past year, the health of the Navy has continued excellent. Protective measures, such as vaccination, sanitation, and proper nutrition have yielded gratifying results in improved health, even in tropical and disease-ridden areas. The number of non-effectives—the term given to those unable to perform their duties due to illness or wounds—among Navy and Marine Corps personnel has been kept at a minimum.

Perhaps the most-talked-of new drug is penicillin, which has been found capable of combating infection where even the highly acclaimed sulfa drugs are powerless. While not in general use, this drug is now being used for special emergency treatment with gratifying results by Navy doctors in all of the fields of combat.

Lobar pneumonia killed 107 out of every 1,000 patients in the last war, but the figures in 1942, which are the latest complete ones available, show that only 8 out of every 1,000 succumb to that disease. Scarlet fever has dropped one-fourth from the last war, and its death rate has fallen to zero. A remarkable reduction of the mortality, from 30 per cent down to 3 per cent, has been obtained by the use of sulphadiazine in meningococcus meningitis. Penicillin recently has effected a further reduction, so that death in this formerly dreaded disease has almost lost its sting. Venereal disease, among the most costly in terms of total man days lost, has been lowered from 8.9 per cent in 1917 to 3.3 per cent at present. Comparable improvements have been made in regard to tuberculosis, influenza, measles, and mumps.

Immunization with tetanus toxoid should be acclaimed as one of the signal accomplishments of war medicine and should be recorded as an important factor in the remarkable reduction of the mortality

of war wounds. Sulfa drugs, the general use of plasma and whole blood transfusions, and the rapid transfer of wounded men by transport or ambulance planes from battlefields to mobile and other hospitals are factors which have contributed to the conservation of thousands of lives, and have served to reduce the mortality of war wounds from 7.1 per cent in World War I to the amazingly low percentage of 1.14 in the present conflict. Sixty-five per cent of all casualties are returned to duty within 90 days. Thirty-five per cent of the wounded in the Pacific are evacuated to larger hospitals in the United States or New Zealand. Of this 35 per cent, 20 per cent return to duty within 9 months.

Medical research which the Navy is undertaking and carrying forward today would have seemed almost fantastic in the last war. If I were to recount the Naval Medical Corps' contribution to medicine, a detailed description would require a long course of lectures. The Naval Medical Research Institute at Bethesda has completed so many investigations that the time at my disposal does not permit me to more than mention some of them. I have alluded previously to several investigations completed at Bethesda, and, in addition thereto, should mention their researches concerning water and food for shipwrecked crews, sunburn prevention, stretchers for use aboard ship, the effects of hot and cold quarters on the efficiency of working personnel, studies of carbon monoxide in aircraft hangar spaces and ready rooms, pressure breathing, physical fitness tests, sterilization of individual canteen water supply, fitness for physical exertion, protection against flash burns by protective films and ointments, losses in Vitamin C in the preparation of certain foods,

dental anesthesia induced by local refrigeration, laboratory tests of anti-glare spectacles, and the brilliant technical application of a method for the direct observation of the brain through the lucite calvarium. These are just a few of the advances contributed by the Naval Medical Research Institute. I do not wish to bore you by recounting all of them, but the character and scope of the research work accomplished there is most impressive.

In all, Naval Medicine has traveled far since the launching of the first hospital ship *Red Rover* to the latest floating hospital ship *Refuge*, and it is a long path from the days of Dr. W. P. C. Barton, the First Chief of the Bureau of Medicine and Surgery, to the days of Admiral McIntire and the modern far-flung system of permanent and mobile hospitals, dispensaries, medical units, hospital ships, and highly specialized personnel who maintain the fighting stamina of our Navy. To these doctors, many of them Reservists who left large and lucrative practices to serve wherever they are needed go our heartfelt thanks for a patriotic duty well done. They should be an inspiration to those who in the near future will join the ranks of the Navy Medical Corps. Not a man in the Army, in the Navy, in the Marine Corps, or in the Coast Guard will return from the war without having in some way been helped in the home-coming by the Medical Corps. The sum total of medical knowledge has been enriched by the Naval Medical Corps. By solving problems peculiar to the Navy, the entire human race has been and will continue to be benefited. When the history of this war is written, the accomplishments of the Medical Corps of the Navy will be one of its brightest chapters.

Death Rate Among Wounded Soldiers Reaches New Low.

The dramatic development of surgery which has reduced the death rate of war wounded in army and navy hospitals to 3 per cent against 8 per cent in World War I should be a consoling fact for the mothers, fathers and loved ones of United States fighting men.

This statement was made by Dr. Irvin Abell of

Louisville, speaking as the guest of Schenley Laboratories, Inc., on the "The Doctor Fights" program which is dedicated to the medical profession. He cited the vast advancements in surgical techniques during the present century which have resulted in far greater chances for the wounded to be restored to sound health, and also of powerful bactericidal drugs, such as penicillin, as spectacular aids to the more efficient surgeon of today.

THE TREATMENT OF ACUTE AND SUBACUTE ANTERIOR POLIOMYELITIS

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The Virginia State Department of Health has reported 140 cases or more of Infantile Paralysis up to August 1, 1944. North Carolina has reported well over 400 cases.

It is reasonable to assume that this section of the country can expect an epidemic of fairly severe proportions.

The problem of treatment has been complicated by the controversy between those who advocate the Kenny method and those who claim the treatment has no foundation in anatomical or physiological principles.

The average practitioner who is called upon to examine and treat the acute case cannot but be confused. He is now confronted with an epidemic, and he is not certain as to what constitutes the correct treatment. The recent report by the committee of Orthopedic Surgeons published in *The Journal of the American Medical Association* condemned the Kenny method, yet there are other Orthopedic Surgeons who approved of many if not all of the principles advocated by Sister Kenny.

The report is concise and presents many irrefutable statements. The proponents of the Kenny method have not as yet answered them. Sister Kenny, in a report given to the Board of Directors of the Kenny Institute, resorted to her usual blistering attack on personalities but in no way satisfactorily answered the questions put forth by the Orthopedic Committee. Undoubtedly, Sister Kenny's report will soon be given wide newspaper publicity.

We have used the Kenny Method at the University of Virginia hospital for over a year; we have followed Miss Kenny's tenets scrupulously. Our conclusions were that the patients were made more comfortable by the applications of hot packs, and that the Kenny system of physiotherapy had some merit. We could see no reason, however, for the system of rigid, almost ritual like, rules laid down by Miss Kenny nor were her explanations of various phenomena valid.

We found the Kenny treatment expensive. It required large numbers of trained personnel, few of

whom are now available. In view of our indifferent results, we have discarded the Kenny treatment and have returned to the so-called Orthodox method, however, utilizing a few of the routines suggested by Miss Kenny.

It is still too early to completely discard the Kenny method, but in facing the necessity of treating large numbers of cases, we have felt that a method as empirical and controversial as the Kenny method must await further study before it is either condemned or accepted.

The University of Virginia Hospital has set up several Infantile Paralysis wards under the direction of the Departments of Orthopedic Surgery and Pediatrics. Since no isolation ward is available here, only patients who have been isolated or quarantined for three weeks are being admitted.

The patients are being placed on firm beds, supplemented by fracture and foot boards. This is the type of bed advocated by Sister Kenny and in our opinion provides excellent immobilization.

Muscle checks are done by trained physiotherapists as well as by the Orthopedic staff and all painful muscle groups are treated with the hot wet packs.

The method of application, as suggested by Sister Kenny, carries with it practically no danger of skin burn and therefore is to be recommended over methods more easily applied. We are not, however, applying the packs more often than 4 or 5 hours daily because personnel requirements rise sharply with applications greater than this. Prostigmine methyl sulphate and atropine are being administered subcutaneously for one dose and after that prostigmine bromide and atropine three times daily. Recent work has shown that these drugs play a great part in relieving muscle spasm.

Cases with bulbar involvement and associated respiratory difficulty will be treated in the respirator. Hot packs can be applied within the machine.

When muscle pain subsides physiotherapy will be instituted. Muscle checks will be done about once a month and hot packs will be discontinued with the disappearance of pain and limitation of motion.

As soon as is feasible, ambulatory braces will be applied.

Cases which show no progress within a period of 6 months are generally considered hopeless so far as future recovery of the affected parts is concerned, and ambulatory braces will also be applied. No surgery is contemplated for at least a year or 18 months after the onset of the disease.

The State Department of Health has distributed a guide for nurses which is published by the National Foundation for Infantile Paralysis. The guide is excellent and contains the necessary information for the nursing care, the preparation of the bed, and the application of hot packs.

Many will be confused by the complexity of the patterns suggested for the application of the hot packs. We believe that if the general method of application is followed satisfactory results will be obtained.

It is not at all necessary particularly during an epidemic to follow the geometric and complicated designs suggested by Miss Kenny for the application of the packs and published in the guide.

Prophylaxis is fully as important as therapeutics. We do know that the virus may lodge in carriers and, therefore, we strongly suggest that during the epidemic, children and young adults be discouraged from congregating. Early cases should be isolated and particular attention paid to the disposal of the excreta. Precautions should be taken against exposure to flies. The insect is known to be able to carry and distribute the virus particularly when excreta from patients in the acute stage of the disease has not been disposed of properly.

Many practitioners will be forced to see acute cases for whom there will be no isolation facilities except in the home. It is suggested that quarantine be maintained for 2 to 3 weeks and after the diagnosis is established that a cursory examination be made of the extremities. Both legs should be lifted carefully from the bed and if the patient complains of pain in the hamstring area, that site should be noted for application of the hot packs. The feet should be dorsiflexed to demonstrate pain in the calf group. Sitting up the patient and flexing the neck

will demonstrate involvement of the neck muscles. Abduction of the arms will demonstrate pain or involvement in the pectoral or shoulder area, and movement of the elbow and wrist will bring out pain if present in those parts.

The patients in the acute stage will be more comfortable on a hard bed and if the hospital bed described above is not available any good firm mattress will serve temporarily.

If wool blankets and wringer equipment cannot be had, hot fomentations of any type may be applied but particular care must be taken to see that the temperature of the water is not so hot as to burn the skin. If material other than wool is used there is danger of a burn and there is also a more rapid heat loss requiring frequent application of the packs.

Prostigmine and atropine may be used after the nausea and headache, if present, subside. After 3 weeks the patient should be moved to a centralized hospital where convalescent care can be given by specialized personnel.

We have been asked about the advisability of using splints, either of the Toronto or plaster type. We have found that the rigid bed is more simple and appears to be satisfactory. There is, however, no valid objection to the use of these splints.

Other methods of heat have been tried: they include hot paraffin, diathermy, infra-red, electric pads, hot water bottles, and heat cradles, but none have as yet proven as efficacious as the hot woolen pack when well rung out.

We shall attempt to keep accurate muscle charts and report later the outcome of our findings. There is no satisfactory method of prognostication. Physiological tests for reaction of degeneration will be done in an attempt to ascertain whether or not there is total nerve supply loss to a muscle area. This method will require a great deal of further study before its value can be appreciated.

We hope that the controversy over the choice of the method of treatment will not discourage the large amount of investigative work now being carried on. We can only ask the medical profession to examine the facts on a purely scientific basis.

MODERN TRENDS IN PSYCHIATRY*

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We are-assembled in this beautiful building this evening to honor a great son of the South, a great character in American Medicine, Dr. Stuart McGuire. His name and his fame as a surgeon, a man of high character and integrity, and a leader in American medicine, are far from unknown even in my native Massachusetts. Unlike some local heroes, however, the stature of Stuart McGuire increases as one nears the scene of his labors. He has worked and lives among you. As a former President of the Medical College of Virginia, and of the Southern Medical Association, as Commanding Officer of a Base Hospital in France in World War I, he is a valued citizen who carries on the fine traditions set by his eminent father. It is a privilege, indeed, to be asked to undertake the high honor of giving one of this year's McGuire Lectures, and to follow a line of distinguished predecessors who have in previous years paid homage to Doctor McGuire.

I am very happy to have the privilege of sharing this honor with my close friend of long standing, Col. William C. Menninger, Chief of the Division of Neuropsychiatry in the Office of the Surgeon General of the United States Army. He is maintaining the high standards of that Division set by his predecessor, the late Col. Roy D. Halloran, and I know of no one today who is better equipped to present to you the topic which he will discuss tomorrow evening, namely, "Problems of Psychiatry in the Army".

The Commonwealth of Virginia, which has played so rich a part in the founding and the development of this country and in so many phases of American culture, has contributed richly to the historical development of the specialty which I purpose to discuss with you this evening, namely, psychiatry. To Virginia, even before the days of the Revolution, goes the credit of having established at Williamsburg in 1773 the first public mental hospital in this country. Indeed, when the second State hospital, that at Staunton, now known as the Western State Hospital,

was founded in 1828, there were still very few such institutions in the whole of the United States; it served patients even from what were then the wilds of Illinois. When a century ago what is now the American Psychiatric Association, the oldest national medical organization in the country, was established, two of the thirteen founders were not only natives of Virginia, but superintendents of Virginia institutions. They were John Minson Galt of Williamsburg, and Francis Stribling of Staunton. Their names are inscribed in letters of gold on the rolls of American psychiatry. Three of the Presidents of that Association in the century which has passed since its founding, have been closely connected with Virginia, Robert Preston of Marion, William F. Drewry of Petersburg, and your own James K. Hall. Although at times the financial support given to the institutions of Virginia has not compared favorably with that of many States, it is most encouraging to us in the psychiatric field to know of the strong support given by Governor Darden to your progressive State Hospital Commission in improving the institutional care of the mentally ill of the State, in developing out-patient services, and, in general, in placing Virginia once again in the vanguard of psychiatric progress. For all these reasons it is a pleasure indeed to visit this historic city and to join with you in honoring Stuart McGuire and the Commonwealth he loves and has served so well.

Psychiatry as a specialty of medicine is relatively new. To be sure, the mentally ill have been with us from the dawn of recorded history, and from the fourteenth century on there have been institutions of a sort at least for the care of the most seriously deranged. These receptacles were considered and called asylums, that is, entirely custodial institutions; they were often under the charge of non-medical persons, and the "care" of the inmates was lamentable indeed. Patients were chained to the walls, little or no attempt was made to warm the rooms, food was thrown to the patients, and there was no attempt at segregation of the sexes. It is not strange that the word Bedlam, originally the name of the oldest English institution (a corruption

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of Bethlehem) has come to mean "a scene of wild uproar and confusion". Although physicians were interested in the physical ills, consideration of what we should now term mental disease was left to the philosophers and to the theologians. Thanks to the medieval confusion of "mind" with "soul", mental disorder was the subject of philosophical speculation rather than of clinical observation, and the care of the mentally ill was not considered as a medical problem. Pinel, the great French physician of the Bicêtre in Paris, who in 1792 scandalized the Parisians by striking the shackles from the inmates of that institution, is the man to whom credit should go for beginning the clinical study of mental disease. Said Pinel in his *Treatise on Insanity*, "I therefore resolved to adopt that method of investigation which has invariably succeeded in all the departments of natural history, viz., to notice successively every fact, without any other object than that of collecting materials for future use; and to endeavor, as far as possible, to divest myself of the influence, both of my own prepossessions and the authority of others".

The impetus given to the humane care of the mentally ill by Pinel in France and simultaneously by his English colleague, Tuke, at the York Retreat, continued through the nineteenth century, receiving a tremendous reenforcement in the mid-century from the activities of Dorothea Lynde Dix. The study of mental disorder, begun by Pinel, however, took another turn with the rise of the school of phrenology under Gall and Spurzheim in the early part of the century. The phrenological school with its stress upon the existence of separate "organs" for the various "faculties" in the brain served to stimulate the study of cerebral localization and must be recognized as one of the large factors in the rise of the German school of neurology. These investigations, valuable though they were, together with the researches on cellular pathology made by Virchow and others, did much to direct the views of mental disorder into terms of alterations in the nervous system; that is, to organicize psychiatry. Even the early experimental psychologists like Wundt looked upon the mind as a distinct entity. Psychologists, then, on the one hand, and the neurologists on the other, did much to keep alive the concept of dualism of mind and body, and even Kraepelin by his classification of mental disorders into distinct entities in the 90's, did much to maintain this idea.

Obviously this dualism tended to keep psychiatry out of close contact with the development of the general field of medicine. A still further factor was operating against a union, namely, the rise of overspecialization. With the development of scientific medicine, a growing tendency has been noted to lay emphasis upon the part as a part. The specialist has been inclined to lose sight of the fact that he is dealing with an individual instead of with a heart or with a gastro-intestinal tract. Not only has the internist not been sufficiently close to the psychiatrist, but the cardiologist has perhaps not been close enough to the gastro-enterologist. Indeed, if any one cause is to be blamed for the manner in which faith healing and other forms of quackery have flourished, it is this failure of "scientific medicine" to treat the whole patient. The recent development of the field of what is known as psychosomatic medicine, of which we shall speak further later, has really aimed to return the practice of medicine to what it formerly was, namely, the consideration of the whole patient as the old fashioned family doctor used to consider him, with the benefit, of course, of the recent advances in diagnosis and therapeutics. Psychiatry and psychosomatic medicine are now being presented in the medical schools as something integrated with the rest of the curriculum, not as formerly—as something separate and apart.

Interestingly enough, the strongest impetus toward a breaking down of this artificial barrier between mind and body, and a recognition that what we call mental activity is but one aspect of living, has come from the physiologists and the biologists. Men like Child, Coghill, Ritter and Harrison carried out work which demonstrated that even in the earliest stages of embryonic development, and in the lowest forms of multi-cellular organisms, there is an integration in cell groups and that the whole is something more than the sum of its parts. Sherrington emphasized the integrative function of the nervous system, but perhaps the greatest impetus of all has come from the work of Walter B. Cannon, who has presented most effectively the effects of emotion upon the functions of various organs of the body and also the extraordinary ability of the body to maintain an equal and steady internal environment through the processes to which he refers as homeostasis. The point of view of the integrated whole, the organism as a unit, has long been the

thesis of the founder of what is known as psychobiology, Dr. Adolf Meyer of Johns Hopkins. This concept of the "organism as a whole" was vigorously and lucidly set forth by Dr. William Alanson White, for over 30 years the Superintendent of Saint Elizabeths Hospital.

Of equal importance with the work of Cannon and the physiologic-biologic school must be mentioned the contributions of Sigmund Freud. Freud's researches cast a flood of light upon the nature of the dynamisms of mental activity, particularly the nature of the instinctive drives and the role of the unconscious. The concepts which Freud enunciated have become a part of the warp and woof of psychiatric terminology and thought. Even those few psychiatrists who claim not to be influenced by Freud are, quite unconsciously perhaps, utilizing Freudian concepts daily in their discussion and interpretation of the cases which they treat.

Mental activity of a sort, at least, is found in every living thing, for mental activity is nothing more than an abstract term which we apply to the sum total of the reactions of the organism as a unit, that is, as an organism, to its environment. Obviously the mental activity of man is carried out at a very different level from that of the rest of the animal kingdom, for man alone has developed speech. This means that he has the ability to communicate his ideas to others, to develop a tradition, a culture. This culture is a significant part of the environment, and has much to do with conditioning the reaction of the individual to any given situation. One need look only as far as the manner in which the sex taboos of any culture modify the expression of one of the most powerful instinctive drives if an example of the effect of tradition and social pressure upon conduct is desired. The reaction will be affected too by the condition of the internal environment, that is, by the malfunction of various organs, and by the experiences to which the organism has been previously subjected. The traditional gloom of the dyspeptic and the optimism of the tuberculous may be cited as illustrations of the former. As for the effect of experiences, it may be safely ventured that every event leaves its trace on the organism, whether we call that trace a memory, a scar, or an allergy. If we look on the individual as an organism in a constant process of adjustment to the internal and external environments, it is not difficult to see why the psychiatrist is interested in a multiplicity of factors

which have affected this adjustment—heredity, physique, temperament and its relation to his physique, the functioning of the various organs, previous experiences forgotten and remembered—all of which have a bearing upon his emotional reaction to the situation, the intensity of the instinctive drives, the culture in which the patient has developed, and the stresses physical and social to which he is now being subjected. Psychiatry, in short, considers the functioning of the organism, and is thus an integral part of medicine. Conversely, it appears to the psychiatrist that the internist and the surgeon cannot well afford to overlook the total reactions of the individual in dealing with his complaints referable to various bodily organs. For example, I was recently consulted about a woman who had had repeated operations for the relief of certain vague pains, all without success. Recently a diagnostician reported to the family that the basis of the pain was "probably mental". He suggested various physical therapies, yet nowhere did he make the suggestion that a psychiatric study would be desirable! Every organic disorder has its psychologic expression, as well as its physiologic one.

One of the common types of total reaction frequently met by the internist is delirium, often found in febrile reactions; yet the degree of delirium is not to be measured by the degree of fever, nor are the symptoms in any given case necessarily like those in another case even of the same type of infection. The general nature of the reaction is similar, the specific details are conditioned by the individual upon whom the infection is at work. One may consider, too, the different types of reaction which persons under the influence of alcohol display. Alcoholic intoxication in the one may produce boisterousness and laughter, in another depression, and in another stupor or irritability. Recent researches in the senile psychoses have demonstrated that the nature, severity and location of the brain lesions in senile dementia are not necessarily reflected in the type of reaction of the patient. There is to be expected in damage to the brain tissue some effect upon the behavior of the individual in view of the integrative nature of the nervous system, but it is found that the emotionally well balanced person can stand a considerable amount of brain damage with relatively little interference with his total reaction, whereas the poorly integrated one may, upon relatively slight cerebral trauma, exhibit striking devia-

tions from normal conduct.

Enough has been said of the background of the present attitude of psychiatrists. What are some of the recent developments and prospects for the future? Of perhaps the greatest interest to the internist and surgeon is the development of what is known as psychosomatic medicine. This term may cause some objections, and properly so, for it tends to promote the notion that there is a psyche as distinguished from the soma, even though the spelling of the word without a hyphen is intended to indicate a wedding of the two. There really is not such an entity as the psyche; it is a convenient abstraction for the sum total of reactions of the whole organism. The psyche, in other words, is merely one aspect of the living being. To this extent, therefore, the term psychosomatic is unfortunate, yet no better term seems to have been devised, and probably sufficient currency has been gained by the present appellation so that the search for a better word should be given up. What the term does do is to emphasize to the somatist, the person interested in the function of the organs, the fact that emotions play a substantial part in the function and dysfunction of the organs and organ systems. There are three general types of psychosomatic problems. First, those conditions of emotional conflict which resemble somatic disease; second, those conditions in which somatic disease or its presence is clouded by a personality disorder; and, third, those in which the presence of somatic disease clouds the personality disorder. The literature in the field of psychosomatic medicine is large and is rapidly growing. The significant work of Flanders Dunbar in her volumes "Emotions and Bodily Changes", and "Psychosomatic Diagnosis" and the presentation of Weiss and English in their volume "Psychosomatic Medicine", are probably well known to this audience. The recently published researches of Harold Wolff on the effects of emotion on gastric function, too, showing that acidity and motility of the stomach can be increased by feelings of anxiety, resentment and hostility, and reversed by inducing the opposite feelings, furnish a striking example of the truth of the teachings of this new specialty of medicine.

The development of psychosomatic medicine, accompanied by the increasing tendency toward the establishment of psychiatric services in general hospitals, is doing much to break down the barriers between psychiatry and the other specialties of medi-

cine which have existed. No longer is the psychiatrist looked upon as interested solely in the psychotic patient. He is becoming recognized as a useful colleague in the treatment of surgical and medical conditions. From the long range point of view, the development of psychosomatic medicine is the most significant psychiatric development of modern times. There are, however, other developments in the field which are of general interest, and which should be considered in a presentation of this sort.

In the diagnostic field a device which has attracted widespread attention is the electro-encephalograph. Berger reported in 1929 that the cells of the brain cortex give off minute rhythmic electrical discharges which can be recorded; this rhythm is distorted in certain conditions, notably in the convulsive states. A great deal of investigative work has been done in the field of these so-called "brain waves", particularly by the Boston workers, Lennox, Davis and Gibbs. The most striking disturbance of the rhythm, as has been said, is in the convulsive states, and it has been demonstrated that this disturbance is sometimes found in persons who have not had overt seizures, but who are members of families in which persons have suffered from epilepsy, the presumption therefore being that these individuals are what might be termed carriers. The electro-encephalograph has been found valuable in diagnosing the epilepsies, judging the prognosis of patients with brain injuries, and in the localization of cortical injuries. It is a useful adjunct in the latter, although probably the pneumoencephalograph, that is the x-ray of the head taken after the injection of air through the spinal canal, is somewhat more diagnostic. The electro-encephalograph should develop further as a useful method of differentiating cortical damage from the so-called traumatic neurosis not infrequently found following head injuries.

In another aspect of diagnosis should be mentioned the extensive developments which have been brought about in the last few years in the testing of the so-called psychological functions, not only "intelligence"—an abstract term for a group of functions—but the various emotional aspects which are far more important in the mental life. The original work of Binet and Simon in the development of the intelligence tests about thirty years ago laid the groundwork for the objective measurement of intellectual accomplishment, even though it was found that the tests, devised originally for children,

were not so readily applicable to adults. Various tests designed particularly for adults, such as that of Doll and that of Wechsler, are a great improvement over the Binet-Simon, indicating the reasoning and judgment abilities of adults. Alongside of these has developed a number of what are known as projective techniques, that is, tests which call for the subject to project his own meaning upon the abstract designs which he is called upon to interpret. Of these projection tests perhaps the best known is the so-called Rorschach, which is still undergoing modification and development. The Murray thematic apperception test is another very valuable procedure. These tests give very startling evidence of the emotional state of the individual, his general personality makeup, and they have a high diagnostic value, not only in distinguishing between the so-called "functional" psychoses, but sometimes in throwing light on whether or not the difficulty is fundamentally due to cortical damage.

As physicians we are all particularly interested in the field of therapy. It is very well to diagnose our patient, but what are we to do to help him? It is often alleged unthinkingly and without much foundation that the psychiatrist can make a diagnosis but that he cannot do much to help the patient. Such an attitude of hopelessness is far from the truth and should be vigorously combated. True it is that some types of mental disorder do not yield readily to therapy, and that some appear to follow a progressive course. Cannot the same be said of some of the degenerative conditions which cause similar trouble to the internist and surgeon? The field of psychiatry is nowhere nearly so hopeless from the point of view of treatment as some of the less well informed think.

One of the great advances made in treatment in the last quarter century is the discovery by Wagner-Jauregg of Vienna that infection of a paretic patient with malaria causes a remission and an apparent cessation of the process. The idea of fighting one disease with another in itself was revolutionary, but time has justified entirely Wagner-Jauregg's claims, which, as a matter of fact, were made after nearly 30 years of close clinical observation. As a result of this method of treatment, general paresis has been transformed from a condition which ordinarily proved fatal within three years of commitment, to a disease capable of cure or substantial improvement. To be sure the process is only checked, and unless

the condition has been treated early some residual damage may remain in the line of mental impairment. The recovery rate is high, the death rate has been vastly lowered, and the entire picture with regard to the committed paretic has been altered. It seems quite likely that fever induced by artificial means such as the Kettering hypertherm is as effective as malaria; it calls for expensive apparatus, however, and many hours of individual trained supervision.

The revolutionary effects of the discovery of the role of vitamins in nutrition need hardly be detailed here. It has been found that some of the delirious reactions in elderly persons usually attributed to the arteriosclerotic process are in some instances due to vitamin deficiency and that they readily respond to intensive use of the B complex. The treatment of the alcoholic psychoses has been vastly improved by vitamin therapy, and pellagra has lost its terrors.

The most dramatic addition to the armamentarium of the psychiatrist has been the development of what are known as the drastic or shock therapies. There is nothing particularly new in the idea that a sudden shock to the individual may in some instances have a beneficial effect upon him if he is suffering from a psychosis or from a neurosis. The noyade or prolonged immersion was used as treatment in mental disorders during the Renaissance in Europe; and Benjamin Rush, that hearty individualist who was the first author on the subject of psychiatry in this country, after recommending such treatment as purging, vomiting, bleeding, the application of cold water and so on, concluded "if all these modes of punishment (sic!) should fail of their intended effects it will be proper to resort to the fear of death." It is quite likely that some of the successes attributed to the drastic surgical treatments advocated by Doctor Cotton in the 20's operated upon this basis. Of the modern shock therapies the first in point of time was that of insulin shock as advocated by Dr. Manfred Sakel of Vienna in 1933. By the administration of large doses of insulin intravenously, a state of hypoglycemic coma, sometimes going to the stage of convulsion, was induced. At the appropriate time the patient was given glucose intravenously and by stomach tube; this procedure was repeated sometimes for as many as 20, 30, or even 50 times. Great results were claimed, and beneficial results are noted still in a moderate number of cases. Some of the early en-

thusiasm has worn off, but it seems safe to say that in schizophrenia the method of Sakel has proved itself to be of some value, at least in the earlier cases. What is often forgotten in evaluating the statistics of these shock therapies is that schizophrenia has a measurable recovery rate, and that, furthermore, the close personal attention which is given to the patient following the insulin shock in the form of nursing care, special diet, exercise, and occupational therapy, may play a substantial role in the benefits observed.

In 1934 Dr. Ladislaus von Meduna of Budapest, thinking that he had observed that schizophrenia does not occur in epileptics, hit upon the idea of inducing a convulsive state on the theory that an antagonism existed between the two conditions. For this purpose he used cardiazol, or as it is known in this country, metrazol, a powerful heart stimulant which, administered intravenously, causes violent generalized convulsions. The convulsions were so violent that in the earlier days at least, numbers of fractures of the vertebrae and long bones, and ruptures of the intervertebral discs, as well as dislocations, were reported. Much of this objection has been overcome by the method of handling the patient during a convulsion and A. E. Bennett of Omaha has suggested the use of curare as a means of diminishing the muscular activity during the convulsion. The Bennett modification has been found to be advantageous and it has reduced the risks materially. There are certain objections to metrazol, however, and the method has, to a large extent, gone out of use in favor of the more recent introduction by the Italian, Cerletti, of electro-shock. This method, which consists in inducing a convulsion by means of the passage of an electric current between the temples, has few of the disadvantages of the metrazol treatment. Both metrazol and electro-shock were soon found to be far more effective in the treatment of depressions, both of the manic-depressive and involutional types, than in schizophrenia, and their greatest use is in these conditions. Complications are relatively rare. The method cannot be said to be entirely safe; there is no assurance as to just what long range damage is being done to the brain by the causation of the convulsion itself and by the anoxia which takes place during the convulsion.

Shock therapy in general is a good illustration of the physical approach to personality problems. The

rationale is far from clear; it is an entirely empirical matter at the present time, although various speculative reasons are offered for its apparent success. Relapse is not unknown, and certainly shock therapy should not be considered as taking the place of psychotherapy, that is the direct relationship between the patient and the physician. The shock therapy furnishes an excellent opening for the rapport and apparently acts as a strong adjuvant of psychotherapy. In all of the physical methods which are employed on patients, and this applies to physical therapy, as well as to the mere act of hospitalization, one must never overlook the relationship of the patient to the physician and the part that that plays. Psychotherapy can be applied in various manners. One contribution of the shock treatments has been indeed that it has emphasized the treatability of mental disorders and has encouraged personal attention to the patient. Whatever may be the future of the shock therapies, this is a permanent gain.

A still more drastic method of physical approach for the treatment of mental disorders is the so-called leucotomy, or the Moniz operation. Moniz, a Portuguese surgeon, apparently inspired by the work of John Fulton and others at Yale on the results of the ablation of certain parts of the frontal lobe in apes, suggested the bilateral severance of certain fibers in the so-called prefrontal area. This is a relatively simple operation from the surgical point of view, but although it does result in a relaxing of tensions, it also brings about abolition of the faculty of foresight; in short, the reason that a patient operated upon in this manner exhibits a more comfortable state of mind is that he is reduced to a somewhat lower level of operation. The procedure is justified in patients no longer young, who have been resistive to other forms of therapy, and whose prognosis appears poor. It is not a procedure to be lightly undertaken.

Psychotherapy has been defined by Whitehorn as "the art of modifying a patient's attitudes in a more healthy direction by the personal influence of the therapist." Psychotherapy, that is, is a far broader term than psychoanalysis, a term which is used to describe the particular technique of Freud. Formal psychoanalysis is a valuable procedure in certain cases in which it is indicated, particularly in the neuroses. It is a lengthy procedure and a somewhat expensive one; there are numerous patients who cannot be lastingly benefited in any other way. Much

work is being done in certain quarters in the development of a brief psychotherapy along psychoanalytic lines, or at least along lines which take advantage of psychoanalytic concepts.

One of the early forms of psychotherapy was illustrated by hypnotism, a procedure which suffered much from the charlatanism with which it was surrounded in its early days. Hypnotism is a valuable procedure but one which is utilized only by a few who are familiar with its techniques and possibilities. In hypnotic states the patient is unusually suggestible and in extremely close rapport with the hypnotist. In recent years a method has been devised for bringing about this rapport and suggestibility by the use of hypnotic drugs, notably sodium amytal and pentothal sodium. This is the procedure to which the term narco-synthesis has been applied by Grinker.

The drug is injected intravenously and immediately following the injection the therapist proceeds to interview the patient. The time is relatively short, as before long the effect of the drug overcomes the patient and he loses consciousness. In the interval between the injection and the loss of consciousness, however, the patient is in a very approachable condition and not infrequently material which has been lost through amnesia can be recovered, and in some psychotic states the patient who has formerly been mute can be induced to talk freely concerning his mental content. By bringing repressed material to the surface and "ventilating" it rapid progress is often made in cure. This procedure is relatively simple, is safe, and highly effective.

More recently some interesting work has been done on what is known as group psychotherapy, in which the therapist deals with a number of patients at once, the effect being radiated as well from one patient to another; that is, the psychotherapy is not only between the therapist and each patient, but each patient has a part in the therapeutic effect of the whole group. One form of this therapy is the psychodrama, a method devised by J. L. Moreno, in which the patient "acts out" his conflicts with the aid of the participants, referred to as "auxiliary egos". The method is one which is highly deserving of further study and development, as it offers much in the line of economy in the therapist's time.

Medicine is interested not only in treatment but in prevention; that is true of psychiatry as well.

The first step in the historical development of psychiatry was custodial care, then came active treatment, and recently preventive activities. The child guidance clinics were one of the early phases in the preventive field. Psychiatrists were early impressed with the fact that the life histories of the patients seen in mental hospitals seemed to show the presence in early life of asocial and abnormal traits. The child guidance clinics were designed to give early attention to undesirable modes of behavior, and to correct them as far as possible. It is perhaps too early to show by any sort of statistics that this aim has been reached. There is no question about the values which have radiated from the child guidance movement, and the results in many cases have more than justified the effort with the individual patient. All too often, of course, it is the family that needs the treatment rather than the child, and in such a case the patient is often an unwilling and unadmitting one!

Psychiatry has come into closer contact with the field of mental deficiency of recent years and thereby in touch with the educational systems. The development of special classes for retarded children is a psychiatric development of great significance, and the corollary provision of psychiatric supervision of school children has often resulted in their reference to child guidance clinics, with resulting benefit to them, to their families, to the teacher, and to the other pupils.

Psychiatry has always had a certain relationship to the criminal courts, not always a particularly happy one. More recently with the development of the attitude in the courts, especially those for juveniles, that the offender is a subject of treatment rather than of punishment, there have been psychiatric clinics which have developed in connection with the courts, and psychiatry has come into a respectable and close relationship. Psychiatry is being applied in the field of industry, especially in the study of accident-prone workers and in absenteeism, as well as in the general personnel work involving the proper placement of difficult employees. In the field of social work psychiatry has both benefited and been benefited. The social worker is an integral part of the psychiatric organization, and the psychiatrist can often contribute substantially to the solution of the problems faced by the social worker.

Much might be said about the development of mental hospitals, but enough has been indicated, to

show that they have become places of treatment rather than places of custody and that their general standards are still improving. Unfortunately there have been States where politics have played too great a part in the administration of these institutions, and, as is to be expected, in those jurisdictions the care of the patients has lagged. It is particularly true in a mental hospital that all activities are reflected directly in the care of the patients, and for this reason the administration of a mental hospital is emphatically a task for the psychiatrist. It is therefore particularly unfortunate that a great State in this Union which has in the past exhibited a marked foresight and generosity in the provision of mental hospitals has only recently abolished all qualifications for the headship of the State hospital system. Virginia is to be congratulated on still recognizing the operation of its State hospitals as a professional job!

Medicine has shown and is showing great advances; the knowledge of physiology, biochemistry,

nutrition and pathology are progressing rapidly; new refinements in diagnostic procedures are being developed, and new methods of treatment are announced daily. New psychological methods are under study, and the mechanisms of behavior are becoming better understood. The various environmental stresses, economic, cultural, and social, which impinge upon man are being recognized as potent factors in behavior, normal and abnormal alike. The relationship of the parts to the whole and that of the whole to its situation are constantly becoming clearer. It seems hardly beyond the reach of possibility that we may see before many years the development of a truly American school of psychiatry, which will synthesize the best in neurophysiology, in Freudian analysis, in psychobiology, in general medicine and in sociology, to bring about a wider appreciation and understanding of the reasons for acceptable and unacceptable varieties of that which sets man off from the rest of creation—his personal relationship to his fellow-men.

Floral Eponym (19)

ABELIA

CLARKE ABEL, 1780-1826

ABELIA is a genus of handsome shrubs from Eastern and Central Asia. The genus was named by Robert Brown for Dr. Clarke Abel, 1780-1826. *Abelia grandiflora* is the plant that gives color to our landscape in specimen plants and hedge-rows at this time of the year.

Dr. Abel was educated for the medical profession. He went as a naturalist with three assistants on Lord Macartney's mission to China. There he made a large collection but on the return voyage on February 16, 1817, his ship was wrecked and all his specimens were lost except a small collection he had previously given to Sir George Staunton. Dr. Abel published an account of his journey under the title of "Narrative of a Journey to the Interior of China, 1816-17." He was subsequently appointed physician to Lord Amherst, the governor general of India and died in that country on November 24, 1826.

PRESENT TRENDS OF PSYCHIATRY IN THE ARMY*

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Psychiatry is concerned and is applicable to every man in the Army just as it applies to every man in civilian life. Potentially we are all psychiatric casualties and, depending on the makeup of our personality and the stress upon it, any of us may become one. There are certain specific applications of psychiatry in the military setting differing from civilian life because of the difference in the structure and function of the Army. Thus, psychiatry participates in a very active way in the selection of men as they come into the Army, a process which, to date, has no extensive counterpart in civilian organizations. It is concerned with the training methods in the Army and the results of training on the soldier. Psychiatry has a tremendous responsibility in the prevention of mental ill-health both during training and in combat. One of its major functions is the treatment of the "breaks" in mental health that do occur at any stage of the soldier's existence. Psychiatry has a very positive interest in the problems of morale, that field of attitudes which might be regarded as synonymous with the mental health of the Army, as well as the motivation of the will to fight and win. And sooner or later, psychiatry will have a high stake in the problems of rehabilitation of the returning soldier, including both those who are well and those who are injured, crippled, or sick.

The problems of this war involving psychiatry are not different in type or quality from those observed in previous wars. It is of historical interest to note that in the Civil War, both armies in the conflict were concerned with the dangers of drafting men under 18 years of age to be combat soldiers, and the recording of that concern reads much like the arguments expressed recently when the draft age was lowered to 18 years. The medical men at that time were perplexed with the problem of malingering and described it and how to deal with it. In World War I, a history was compiled of the splendid record of the Medical Department, and the Volume X of that history, which was devoted to neuro-

psychiatry, outlines the same problems which we are meeting in this war. Through the brilliant leadership of Dr. Thomas W. Salmon, psychiatry made a tremendous contribution in the first World War, not only to the military situation but also in the furtherance of its own position in the field of medicine. Until that time, the practice of psychiatry had been largely restricted to the secluded cloisters on the edge of the village—the insane asylums. But the demands of the war and the results of the war brought a wide recognition of the needs for psychiatry outside institutions. Dr. Salmon described this emergence of the specialty as comparable to the arrival of Cinderella who, even though arriving late in the evolution of medicine, came forth at this special crisis, through great demand, to take her rightful seat among her sister specialties in the field of medicine.

During the intervening years since 1918, psychiatry has made great strides and it is not so surprising that its great importance should be recognized in the present conflict. As Doctor Overholser indicated to you yesterday, psychiatrists are no longer preoccupied primarily with the insane. In fact, this group of unhappy individuals now represents a small percentage of the interest of psychiatry. The physicians in this field are concerned with the way normal people feel and think and behave. They are interested in a man's minor maladjustments, his minor unhappiness, and his ineffectiveness; many devote their entire professional life to the prevention of these problems. Similarly, in the Army the psychiatric efforts are directed not only toward the diagnosis and treatment of the casualties but with equal importance to the maintenance of mental health.

Although there are no differences in types or quality of problems in the present war as compared to previous wars, there is an ever increasing extension of psychiatric activities. Selection of men is of major interest; training and retraining have many psychiatric implications; and, in this war for the first time, psychiatry has a working interest in problems of morale. The present conflict differs from any preceding in its magnitude and, consequently, the problems of psychiatry are quantitatively much

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greater than in any previous war. This increased job of psychiatry is due not only to the increased numbers of men involved in the war, but also to other less obvious factors which characterize the nature of the holocaust. One could say it is that this is a different type of war: the global nature contributes entirely new problems, with different climates, extremes of heat and cold, isolation, dangers, and petty but devastating irritations. The fighting is much more fluid and the new types of weapons contribute to make the stress and strain on the participant very much greater. The psychiatric problems concerned in combat aviation, as well as the results of the bombing and strafing by planes, are entirely new in this war as compared to any preceding. But with all these differences, there are probably no new psychiatric clinical pictures or syndromes. Many have come to light that have variations from those seen in civilian experience, like the acute, short-lived episodes related to fatigue and fear, in which the physical state of exhaustion plays an important etiologic role. Our Army psychiatrists are having the experience of seeing, for the first time, certain types of syndromes which are relatively infrequently seen in civilian psychiatric practice.

The growth of the body of knowledge of psychiatry and its expanding ramifications into all fields of human behavior have become extensive. The magnitude of the present conflict, both as it concerns those immediate participants as well as our civilian populace, is such as vitally to affect all of us. These two factors combine to make the number of problems legion that confront the small handful of us in the military service responsible for their solution. There are many additional factors which make these problems difficult of solution. In the first place, we do have far too few psychiatrists. Approximately 2 per cent of all physicians are psychiatrists and, roughly, about one-third of this number are in the armed forces. In contrast, just one of the functions of psychiatry in the Army, namely, the hospital responsibilities, requires that we provide the medical attention for all neuropsychiatric patients in Army hospitals. In another extremely important function, the selection of men at induction boards, the shortage of psychiatrists, coupled with the tremendous number of men to be examined and the shortage of time in which to do it, presents a very difficult problem.

Of no less importance is the problem of the indoc-

trination of the soldier with a will to fight and a determination to tie into the enemy and defeat him. Included in this indoctrination is the necessity to present the dangers that face the man, including the possibility that he, the soldier, may be injured, maimed or even killed. No one need headline these possible eventualities and no one does, but in the job of developing the mental attitude of the soldier to his job, we cannot lose sight of the possible sacrifices, least of all for the man who knows that it is *he* who may have to make them. This problem of indoctrination is a very important one which, in part, at least, is psychiatric. It is pertinent that the civilian public should know how they can aid with this problem, for they are in a position to greatly help or greatly hinder. From the soldier's point of view, he has given up the security, satisfaction, and affection of his home, to be transported to a point thousands of miles away where he exists in cold or heat, mud or sand, waiting for the time when he will be expected to charge upon a beach or fly over Berlin and, very possibly, not live to tell the tale. What makes him do this? What makes him willing to do this? In part it is good leadership within the Army; in part it is a confidence he has in himself and his equipment and a knowledge of the need for the job to be done. But we have learned that he is not led to fight through blind hate of the enemy, and attempts to make that the motive have not been either successful or perhaps even wise. Surprisingly enough, the most powerful motive is love: immediately, a type of love that defies verbal description, which he feels for his associates, his buddies. He goes because his outfit is going, and he counts on the man on his right and on his left to go with him and they count on him to go with them. More distantly, it is his love for those back home that aids him in the fight; he is doing it for them, fully realizing they inadequately understand the cost but nevertheless hoping they will. And so the attitude of the home front is tremendously important in maintaining the morale of the soldier. The attitude and action of the home front are of tremendous influence on the attitude and action of the battle front.

Despite the magnitude of the problems and the great quantity of them, psychiatry has done and is doing a creditable job in the Army. It functions at various levels or stages in the experience of the soldier, and a brief description of these may be of interest.

INDUCTION CENTER

It is planned that every man entering the Army will receive a complete physical examination at the induction center, an examination which includes a psychiatric evaluation. Despite the shortage of psychiatrists, this standard has been remarkably well maintained. The limitation of time for the examination of each individual, because of the large number of men to be examined daily in every induction center, results in a somewhat superficial examination in many instances. Nevertheless, the figures indicate that it is sufficiently efficient to save many men and the Army from an unprofitable experience. An attempt to obtain social data on every inductee was initiated in November of 1943, a Herculean task for which there were very inadequate facilities in many States and even many large communities. In so far as such is available, it has been of very real value in guiding the psychiatrist in his decision in problem cases. The psychiatrist is placed last in the examination line and, consequently, has the additional advantage of the observations and findings of the other examining physicians. In the larger communities where the induction examinations are carried out, civilian psychiatrists have volunteered their services and this has been of tremendous help in those centers. In fact, without such assistance, complete coverage with psychiatric examinations would not be possible. In those induction centers located in camps, particularly those at some distance from any large community, the examinations are made entirely by Army psychiatrists. In a few instances, medical officers without formal psychiatric training have had to be used for the examination. Because the time allotted for each examination, from two to fifteen minutes, is short, other aids in addition to the social history, are widely used. A group selective index has been developed at Cornell by Mittleman and Wolf, which consists of a series of questions given to a group prior to their examination to determine which individuals need to see the psychiatrist. A somewhat similar group selection test has been devised by combined efforts of the Neuropsychiatry Division of The Surgeon General's Office and the Psychological Research Branch of the Morale Services Division, based on extensive surveys and trials of the performance of soldiers. Many induction centers have routinely used a personal inventory blank filled out by the inductee himself covering points in his past adjustment and accomplish-

ment.

One important aspect of the induction examination should be better understood by the general public. The induction examination is for the purpose of selection of men who, on the basis of their physical and mental makeup, offer good prospects for making good soldiers. Necessarily, many individuals, producers in civilian life and reasonably well-adjusted in civilian life, do not pass the examination. It is extremely unfortunate that their refusal by the Army should be regarded in any sense as a stigma, a rejection, regardless of the cause. The fact that a man does not make the football team is no basis for considering him a weakling nor should one fail to recognize that there are many jobs outside the Army which are equally important to any in the Army. The draft board has a dual responsibility: to select men for the defense of the community, the Army, as well as to consider and protect the vital needs within the community. It is much more accurate to regard those individuals who do not meet the physical standards for acceptance into the Army as being suitable for and charged with important responsibilities on the home front, a positive designation, and not merely "rejects". Particularly is this true of the large number of individuals whose personalities make them poor risks for themselves and the Army, if forced to meet the severe demands of Army life and functions.

PREVENTIVE PSYCHIATRY

The job of prevention of mental ill-health in the Army has been approached in several ways; probably the most important effort has been in the field of morale, the indoctrination of men with the knowledge of what to expect in Army life and the reasons for their job. It is recognized that a civilian needs a new orientation on joining the Army in order to aid him in necessary personal readjustments. The subject of morale will be discussed shortly. Suffice at this point to state that one direct approach to the problem of orientation by the neuropsychiatry division was the inclusion in the basic training of a course in mental hygiene for all officers and enlisted men. Because of the awareness of the problem of mental ill-health and the necessity to prevent it through good leadership, the War Department has very recently ordered a course of six hours of mental hygiene in the basic training of all officers in the Army and three hours for all enlisted men. In

some basic training camps, efforts had been made successfully by the psychiatrist to include some lectures in this field but these had occurred spasmodically. Under the new order, mental hygiene is prescribed along with training in sanitation and first aid. Technical manuals in this subject are now issued to the field.

Preventive efforts in psychiatry, along with therapeutic efforts, are being carried out in the Army by two highly selected groups of psychiatrists. The first of these is in the Replacement Training Centers, the camps where the majority of inductees report from the Reception Centers for their basic training. In each of these camps, a so-called "consultation service" has been established, consisting of a psychiatrist, a psychologist and, if possible, one or more social workers. This group serves as a mental hygiene clinic, to which soldiers are referred by the dispensaries in the camp by the Commanding Officers of units, by the Provost Marshal, the Judge Advocate, and other sources. The soldier arriving in the basic training camp, usually directly from civilian life, has left his major anchors of adjustment: his family, his friends, and his job. In exchange, he has come to this new, strange, and rugged environment and it is not surprising that he experiences some difficulty in adjusting to this new life. It is the aim of the Army to aid in this adjustment in every way possible, and it is a major function of the Consultation Service. This is accomplished through the indoctrination of the new recruits as to their new job and the difficulties they may expect, and the Army's appreciation of the problems in their readjustment. Many individuals with personal problems are seen by the psychiatrist and psychologist in these camps. The psychiatrist also has the responsibility of being of assistance to the officers, in discussing with them the problems of personal management, as well as their own personal problems.

Various types of devices have been developed by these psychiatrists to facilitate their work. Important assistance is provided by the American Red Cross. Major S. H. Kraines, in North Camp Hood, developed a system of advisors, using Red Cross specially trained non-commissioned officers in each Company to serve as councillors with the function of looking into the mal-adjustment problems of the men of their respective Companies and volunteering help. When they find a soldier who is depressed, homesick, or seclusive, they attempt to find the

causes. If they are not capable of suggesting and aiding in a solution, they refer the problem to their Commanding Officer who, in turn, if necessary, can refer it to the psychiatrist. This advisor system has been adopted with modifications in several of the basic training camps. In another camp, every immediate relative is contacted by letter by the Commanding Officer, offering to answer questions and particularly requesting the family not to trouble the soldier with worries and concerns at home. Not only does this help the morale of the soldier but also has given opportunity to assist the family through suggestions of solution for their problems. In some camps, special training units have been created for those soldiers who have special difficulty with language, others with muscular coordination, and still others with learning difficulties, all of whom are in close contact with the consultation service.

The second large group of psychiatrists doing primarily preventive psychiatry are in the Divisions. Appointed in December '43, each Infantry and Armored Division has been assigned a psychiatrist. Like the replacement training psychiatrist, his job is primarily one of influencing the mental health of the Division through contacts with the officers and men. While the Division is in training, it is his function to assist the officers through presentations of mental hygiene, to aid them in the solution of their personnel problems with individual men, to consult therapeutically with individuals in the Division, and in some instances to remove those men not capable of combat service. Differing from the Replacement Training Center psychiatrists, the Division psychiatrist will accompany his outfit into combat and will be responsible for the treatment of any neuropsychiatric casualties that occur.

Both of these groups of psychiatrists are primarily mental hygienists, although some of their work is necessarily therapeutic. Division psychiatrists were utilized in the American Army in the last war, although, as mentioned, were only recently appointed in the Army in the present war. On the other hand, the Replacement Training Center psychiatrists were not used in the last war but have been functioning for more than a year in our basic training camps.

TREATMENT

Definitive treatment of neuropsychiatric patients has not had a high priority in the Army medical plan. This situation results from the various factors

which are of importance for the civilian public to know. Not infrequently the Army comes in for criticism from uninformed individuals because a particular individual joined the Army, had a nervous breakdown of some degree and then the Army discharged him. The public is critical of the fact that the man was discharged. From the Army's point of view the situation is this: such an individual must be regarded as having some degree of predisposition to such a difficulty before he joined the Army. Often there is very concrete evidence of such; in others it can only be surmised on the basis of previous mild difficulties. During the last year there have been a number of such individuals discharged from the Army, because from the Army's point of view it is unfair to the man to expect him to give further service to the war effort in uniform and it is unprofitable for the Army to attempt to keep him in a partial job. Extended treatment is not available in the Army Hospital for the very important reason that the main job of the Army is to fight and win the war. There is not sufficient manpower within the ranks of the Medical Department to carry out this primary mission and at the same time to attempt to intensively treat individuals who cannot be returned to active duty. Furthermore, the Veterans' Facilities are established with treatment as one of their prime functions and every veteran is entitled to treatment from them when it is indicated.

On the other hand, the Army Medical Corps is very much interested in providing as much treatment of neuropsychiatric patients as the facilities will permit and a considerable amount of therapy is carried out in Army hospitals. Very specific directives have been issued covering this function and these are being carried out. Because of the shortage of manpower, highly individualized treatment is impossible. Despite a heavy burden, a major interest of the psychiatrist is in treatment, much of which is carried out with groups of patients rather than single individuals. Many of our hospitals carry on group psycho-therapeutic sessions with those patients who are able to profit from such. Most of our general hospitals have occupational therapists who devote a considerable portion of their time to neuropsychiatric patients. Not a few hospitals have hydrotherapy equipment and all of the larger ones are equipped to utilize shock therapy. Probably the most effective treatment program carried out in many neuropsychiatric sections is an activity schedule which includes

occupation, crafts, arts, music, recreation, education in many and varied forms. As an example, I know of one hospital where a course in the Russian language was a part of this activity program for the neuropsychiatric patients and was eminently successful. In several hospitals Spanish and French are taught. In another hospital, the patient population became ornithologically minded, building bird houses, bird feeders, and keeping bird lists, because of the enthusiasm of a medical administrative corps officer. Classes in chess and sign painting, music appreciation and current events are not at all uncommon in psychiatric sections of Army hospitals.

Probably some of the most effective psychiatric treatment being carried out in the Army is done by the Hospital psychiatrists with "Out-Patients". Nearly every station and general hospital maintains a consultation service for soldiers referred from Field Units, seen by appointment, and afforded individual psychotherapy. The majority of such patients are never admitted to the hospital but are maintained on an out-patient status.

As in every effective psychiatric treatment program, a considerable degree of the success depends on the ward personnel. Many of our Army hospitals had given training courses in psychiatry for the nurses and corpsmen. In many hospitals this is a continuous program. In addition, assistance is provided by the occupational therapists in General Hospitals, and very generous help from the recreation and social workers from the Red Cross organization in all of the hospitals.

A very important part of the treatment program in psychiatry in the Army is directed towards the battle casualties in overseas theaters. At these points some brilliant work has been done in which battle neurotic responses have been successfully treated and returned to front-line duty again. Others have been able to carry on in the zone of communications in the theater of operations. This treatment has varied somewhat in different areas but in general it has consisted in giving the soldier who breaks on the battle front after prolonged continuous fighting, sufficient amount of sedatives to make him somewhat drowsy before even leaving the forward area. He is sent back to a collecting station, or, if necessary, to the evacuation hospital. At these points he is given additional sedative, sufficient to keep him asleep for 24-48 hours, supplied with extra food, given a short

but highly beneficial rest, and in many cases a superficial type of psychotherapy. A majority of soldiers are ready to return to the fighting front within three or four days, and a high percentage of these are able to carry on again indefinitely. For more severe cases, one or more psychotherapeutic sessions are carried out under moderately deep sedation. In this state the patient is encouraged to freely express and relieve his battle fears and experiences. Not infrequently this procedure is effective in relieving the soldier of his symptoms. As in the last war, our experience indicates that the closer to the front that treatment can be and is administered, the better chance for successful treatment.

MORALE

Morale is a composite attitude embodying determination, fight, confidence, ideological convictions and belief, and it may be strong or weak. But for victory it must be strong in the Army, as well as in the supporting group at home. The Army regards it of such major importance as to have established a large and highly qualified staff, the Morale Services Division, to cope with its various aspects. There is a Research Branch which studies attitudes within the Army, experimental studies to determine the impact of varied methods of information and education, and analysis of statistics. An Information Branch provides information to troops through news bulletins, radio, newspapers, films, and other media. The Education Branch provides men in service with correspondence courses through accredited universities and colleges; has given instruction in foreign languages to more than a million men and plans for education as a part of rehabilitation. The Orientation Branch plans methods by which the soldier is informed as to the causes of the war and provides a basis for every soldier to develop a sense of personal mission in the part his unit is playing in the war.

Morale is of interest to us in psychiatry and psychiatry can be a major help to morale. Both subjects are concerned with the way a man feels and thinks and acts. The problems of morale are inseparably tied to the psychological force of motivation, and psychiatry, as a science, is primarily interested in motivation—why people behave as they do and what their behavior means. A very direct link between morale and psychiatry is to be seen in the relationships between the state of morale and

the frequency of neuropsychiatric casualties. If the morale becomes poor, the number of psychiatric problems increase and the converse is equally true. Morale, at least in the Army, is synonymous with mental health. Recognizing this relationship, a liaison between the Morale Services Division and the Neuropsychiatry Division of the Surgeon General's Office was established more than a year ago.

REHABILITATION

When an Army officer speaks to a civilian audience of rehabilitation, he must immediately clarify his meaning of the term. He probably refers to the efforts made by the Army to rehabilitate a soldier for further service within the Army. But even within the Army, there is an ambiguity of the term as applied to our various efforts. The rehabilitation centers, one located in each service command, are devoted entirely to the reclaiming of soldiers who have over-stepped the law, have gone absent without leave, have misbehaved, have ignored or defied regulations and have had a court martial. We have a psychiatrist in each of these units who concerns himself with the psychological problems of these men. In all of our hospitals, we have a type of rehabilitation program, termed the reconditioning program, which has as its aim to physically recondition men who have been ill for further duty in the Army. This program places a major emphasis on the physical reconditioning but also includes occupational therapy, educational classes, and group discussions for the purpose of Army orientation and morale building. From experience, it was found that neuropsychiatric patients did not fit well into this program.* To date in only two of our general hospitals has an experimental section of neuropsychiatric patients been included, although in a few others partial attempts have been made to include the better adjusted patients in a part of the program. These attempts have been sufficiently successful to lead to definite plans for the expansion of the program, but with a schedule of activities planned to meet their psychiatric problems.

Another experimental trial in rehabilitation was begun in February when a small group of patients recovering from psychiatric illnesses were sent for specialized retraining in certain basic training camps. They were carefully selected and, with equal

*Since this paper was presented, a specific program for reconditioning neuropsychiatric patients has been authorized in all larger Army hospitals.

care, assigned to take courses in subjects useful within the Army, to which they were best qualified and in which they manifested interest. The course work was given at a rate of speed which they could maintain, depending upon their particular handicap. Throughout their retraining, psychiatrists and psychologists kept in close contact with each soldier, providing individual and group psychotherapy. In addition, a planned program of recreation and education was in continuous operation. This project is still in the experimental stage but is being regarded in a favorable light as a possible method of salvaging men. If successful, it will undoubtedly be expanded.

Rehabilitation of the soldier who is discharged from the Service presents an enormous number of major problems. The Army and the Navy must devote their entire energy to the prosecution of the war. The leadership for the rehabilitation problem must fall on the civilian agencies, national, State and community. On the basis of contact with many of these men, we may venture some discussion of this point.

Figures recently released indicate several hundred thousand men have already been discharged from the Army. They return to their communities hoping to readjust to their former positions and occupations, after an interruption varying from a few to many months. Their return is very different than had they been away on a civilian mission for the same period. Everyone in the community will know of their return from the Army and speculate as to the reasons. Despite the fact that work is momentarily plentiful, the average employer will attempt to determine the reasons for the man's discharge from the Army. A number of the men discharged have been released because of neuropsychiatric difficulties. It is to be expected that particularly will these men have a major readjustment to make in returning home. In many instances they will have difficulty in explaining to their uninformed inquisi-

tors the reasons for their discharge. If the man indicates that it was because of some nervous difficulty, all too often people will interpret this as meaning that the man must have been very sick, possibly even psychotic. No more important message can be given to the general public about the returning neuropsychiatric casualties from the Army than to indicate that these men are no more incapacitated, no more irresponsible, no more incompetent and no more incapable than those of any cross section segment of our population. It is not inconceivable that in many instances the man may be more capable in his work than he was before he went to the Army. There is no evidence from a medical point of view that the ability to work or hold a job by the vast majority of these men should be questioned any more than a man who has had appendicitis. Those communities and particularly those employers who look upon these returning veterans with skepticism or doubt, commit an unforgivable injustice. The man's efforts to help his country have cost him heavily; will the family, the employer, the community make him pay even more dearly?

In summary, an attempt has been made to present a few of the outstanding facets of psychiatric interest and function in the Army. Reference has been made to the selection at induction centers, preventive efforts in training centers and divisions, treatment methods in hospitals and in combat, morale and its relation to psychiatry, and, finally, rehabilitation both within and out of the Army. There have been several intentions in presenting a description of these points: to indicate the trend of psychiatry in the Army; to make clearly understood that while we are making progress, there are many unanswered and unsolved questions and incompleting tasks; and, finally, to convey the importance of all these problems to the home front with some suggestions regarding attitudes for their guidance and problems that they must solve.

THE TREATMENT OF ALCOHOLIC ADDICTION*

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The attitude of the Commonwealth of Virginia toward the acute and chronic forms of alcoholism is very similar to the situation so well described by Woodrow Wilson as "watchful waiting". It must always be remembered that, in this State at least, the non-drinkers outnumber the drinkers, so, if the temperate drinkers are added to the non-drinkers, the majority swings toward prohibition. Prohibition has been tried, and found to be wanting, so few desire its return, yet, if the consumption of spirituous liquors continues to increase at its present alarming rate, jails to be filled with inebriates, and the state hospitals to admit more and more alcoholics, something other than the present system of control will have to be attempted.

According to F. W. Gwaltney in the *Mental Hygiene Survey* of May, 1943, the per capita consumption of alcohol in Virginia rose from four gallons in 1937 to thirteen gallons in 1942, an increase of 238 per cent. The money spent on liquor was \$75,000,000, a sum of money greater than was spent by the people of the State for all education, welfare, health, and religious purposes combined. Of the 104,000 jail admissions last year, approximately 50 per cent were for alcoholism. There were 30,000 to 35,000 different individuals jailed last year for this same reason. Six hundred persons a year entered our State hospitals because of alcohol alone, while two hundred more of admissions were found to be excessive drinkers.

There can be no doubt regarding the tremendous size of this problem or the extreme danger to our Commonwealth. Also, there can be no doubt that, if something is not done soon, the temperate drinker will swing to the right and the State will again suffer from the unhappy complications of prohibition.

Dr. Lawrence Kolb, in his paper read before the Yale Summer School of Alcohol Studies in 1943, states that "Alcoholism is a public health problem, but public health officers pay little attention to it. The problem is primarily a medical one that needs greater attention from physicians and health officers". It is stated in many other places that the problem is a medical one. In other words, it is the

concern of the physician to attack the alcohol problem.

This is a great challenge to the medical profession. The preacher, the professional reformer, the law and the educational system of the state have struggled with this problem for years, but the path they have trod is strewn with the broken remnants of their frustrated attempts. Now the trend is toward the lap of this profession. The alcoholic is sick; the alcoholic is not a criminal. He needs a doctor; he does not need punishment. It is indeed of concern to the physician to meet the challenge, for the medical profession, in a way, is the court of last resort. Treatment of the sick is the job of the doctor, and at last it is recognized, subconsciously at least by all that alcoholism is a disease.

The reasons a man drinks are many:

If on my theme I rightly think,
There are five reasons why men drink:
Good wine; a friend; because I'm dry;
Or lest I should be by and by;
Or—any other reason why.

DEAN ALDRICH.

Undoubtedly there are millions of temperate drinkers, but there are approximately 2,500,000 intemperate drinkers in the United States. There are at least 100,000 intemperate drinkers in Virginia. From this latter come the patients of the physician. The intemperate drinkers, or excessive drinkers, are generally divided in two classes: first, the problem drinkers who, as a result of drinking alcohol, have become serious problems to themselves, to their families and to the community. The other category includes those with red noses who develop heart, kidney, or liver disease without being a disturbing factor in their community, but nevertheless problems to their physician because of body changes produced by alcohol.

This latter type is the chronic alcoholic with perhaps as much structural change as the problem drinker, but because of their ability to get along with society they present simple physical problems, and these may be treated as cases of cirrhosis of the liver, heart disease, or kidney degeneration. The problem drinker is not such a simple affair and has to be approached from several angles because of the

*Read at the annual meeting of the Medical Society of Virginia, at Roanoke, October 25-27, 1943.

diverse etiological factors. There are, however, several common characteristics to all problem drinkers. Dr. Lawrence Kolb has expressed the situation very well when he states, "They try cures and fail; they take pledges not to drink and become drunk the next day. One drink starts them on a spree. Wanting to stay well, and having spent several hundred dollars on a cure, they gravitate to a saloon and get drunk as soon as the cure is completed. They are helpless people who relapse time after time in spite of the best intentions, and among them are many who have deteriorated to such an extent that they no longer have any intentions beyond getting a drink as soon as possible. These are the real alcoholic addicts. It is conservatively estimated that there are at least 200,000 alcoholics in the United States who belong to this more or less helpless group. It also may be assumed that at any one time there are in the United States 1,000,000 or more persons who, because of excessive susceptibility to alcohol, are in danger of becoming problems." A large percentage of these patients are men. According to Glueck, "Careful and prolonged studies of certain individual problem drinkers unmistakably demonstrate that their excessive drinking to the point of intoxication is never pursued as an end in itself. It is, on the contrary, a means toward achievement of a variety of ends, some of which are consciously pursued, while others are conditioned by more or less obscure or completely unconscious sources of motivation." Wittman describes a more or less characteristic personality for the chronic alcoholic of this type: 1. He has a weak degree of restraint, mental poise, and stability. 2. He is slightly more selfish, conceited, and hence, more anti-social than the average individual. He also has a characteristic background:

1. He has a domineering, but idealized mother and a stern autocratic father whom the patient feared as a child.

2. A marked degree of strict unquestioning obedience demanded in family life with little freedom allowed.

3. A feeling of insecurity, as evidenced by an insistent feeling of need for religious security and a strong feeling of sin and guilt.

4. Marked interest in opposite sex with many love affairs but poor marital adjustment.

5. Lack of self-consciousness with marked ability to get along with and be socially acceptable to others.

In spite of these common characteristics the alcoholism is based on varied but definite types of personality reactions that make it essential to separate the total group into four subtypes if treatment is to be successful, since the fundamental disorder in each class needs an entirely different approach.

The first group are those with an underlying major mental disease, the severe schizoid, the schizophrenic, the early parietic, the epileptic, or manic depressive. These major reactions are hidden by the alcoholism, but come to light as the drug is removed. There can be no doubt in any one's mind that these problems concern the physician and especially the psychiatrist.

Group two, the largest group, is composed of inadequate, immature, individuals who learned to relieve tension and thus escape their conflicts by the use of alcohol. Their reaction is called psychoneurotic by Strecker, but the immaturity of the reaction and the fact that they cannot stand present suffering for future gain distinguishes their behavior, making it more that of the psychopathic inferior. Compensation for inner tensions caused by endogenous or exogenous inadequacies is what these individuals find in alcohol. A relaxation follows immediately on drinking so it is very difficult for them to face a life of tension where easy and quick relief is at hand.

The third grouping includes the definitely handicapped, for example, the patient with retarded or borderline intelligence, especially if they are hyper-suggestible. It also includes the true psychopathic inferior with a deficient moral and emotional response. Here should be placed those few individuals that are especially sensitive to alcohol. They have an immediate total personality change when they imbibe small amounts of spirits. The so-called poverty drinker should come here because he drinks to compensate for his economic hopelessness; his problems as well as the problem of the rest of this group depends on the social consciousness of their environment. The treatment is social rather than medical.

Finally, the fourth group is composed of patients with mental disease produced by alcohol, such as, patients with chronic paranoid conditions, chronic deterioration, and Korsakoff's psychosis. These disorders, while produced by alcoholic intoxication often become fixed and should be treated in institutions for the chronic mental diseases after the chronicity is established.

In summary, problem drinkers are divided into four classes according to the underlying cause of their alcoholism. The members of the first group are often called the symptomatic drinkers, since their alcoholism is but a symptom of their underlying disease. The second group seeks compensation in alcohol for intrinsic inadequacies which cause tension. The third are the group who because of definite defects are socially frustrated, while the fourth group is composed of those with chronic mental disease produced by alcohol.

The treatment of the addict then varies with the type of his underlying cause. Those with an underlying psychosis should be treated differently in many ways from those with simpler maladjustment, while the socially handicapped need another approach. However, the doctor's preliminary approach is the same for practically all such patients while the remainder of his therapy, also, follows practically the same steps as he carries the patient on to a cure.

The patient usually reports to the physician under the influence of alcohol. He may not be drunk, but he very likely has been drinking for some time. Therefore, the first step is toward detoxication. This may be a very serious stage of the treatment, as this is the period during which the alcoholic may die. Certainly this is no task to undertake in a jail.

The renewal of the vitamin content of the body is also an immediate problem. This can be done rapidly and efficiently if the proper solutions are given intravenously and by mouth. The next step is to obtain a healthy body. To do this, total abstinence, continued vitamin therapy, and correction of any physical defects in the body and muscle building are necessary.

In order to accomplish this it is necessary to have some sort of control over the patients. No alcoholic will remain under such restrictions without some sort of restraint. The most efficient type is to have them under lock and key, although the personality of the physician may act as a restraint provided the transfer is strong. The conditioned reflex treatment is just another method of restraint which forces abstinence for a time, for, if it is not followed by personality readjustment, it will fail. The unrestrained alcoholic, as soon as his feeling of well-being has returned, is certain of his cure, so that before his heart, his kidneys or liver can be examined he is gone, certain in his own mind that he will never drink again as well as the fact that his

condition was not his fault and the situation grossly exaggerated. He is most anxious to have no one know of his hospital admission, because some one might suspect that he couldn't hold his liquor, while the true tragedy is that everyone knows he can't but himself.

If he stays for treatment, his attitude gradually changes. His body becomes healthy and his thinking clear. He then can be given the next step, that of understanding or insight. This can only come after many interviews with his physician. The physician and he must work in close harmony; condition of mutual respect and regard established. Then follows the determination to get well. Next comes the personality adjustment and, finally, the patient is ready for his social life once more. This must be a new life regulated to suit him so he in turn will be able to suit his environment. If it could be understood that society is at fault, as well as the drunkard, perhaps more could be done to re-establish these unfortunates. Finally, as this person is weak or he would not have his illness, follow up is essential. He must be able to lean on some one through his first break, and then his second—until he learns to walk alone. Thus treatment actually depends upon a continuation of medical and psychiatric skills.

In Virginia we have an alarming situation. Thirty thousand people were placed in jail during one year because of alcoholism. Undoubtedly, all of these did not need to go there, but who is to judge? Certainly there was no other way to handle these disturbing individuals with our present set-up. They were poisoned sufferers and needed medical care. They were not criminals needing punishment. Why, then, cannot the doctors of the State meet this challenge by opening their hospitals to the alcoholics? A small alcoholic ward set apart with interested and trained personnel in charge would meet the problem. Then this sick man could be taken from the street to be studied and diagnosed, with consultation service furnished and adequate care given. If he is a chronic alcoholic or a problem drinker, let him be sent to a special institution for this type of disease; if not, let him be relieved and returned to work.

This institution where he is referred should be centrally placed and equipped to give all the means of therapy outlined above. It should be near a Medical Center so that adequate consultation would be at hand. The staff should be of the best, men

who believe in their work and are kept abreast of the times by constant study and research. They must be able to choose which patients they will treat and which will be sent elsewhere. The institution must be dignified and attractive so that the patient not only will be able to have faith in the physician but also will be proud of his hospital. There must be means of building up the body and of enforcing abstinence. Also the patient should be able to learn some trade or other skill that will give him the self-confidence he needs to re-enter life successfully. Finally, then, this central hospital must be able to refer this patient back to some interested physician, perhaps to the one who first saw him in the acute stage or perhaps to the physician in charge of a local unit for therapy of this disease. There also must be a follow up through this doctor, through traveling clinics from the central hospital, or some other social agency. For, when all is said and done, without follow up and without social adjustment, the alcoholic's chances of cure are still under question.

In summary, the treatment of alcoholism in Virginia is a medical problem which should be attacked immediately by the physicians of the State. The cure depends on the treatment of underlying causes which need time and special skills to correct. However, no 400 bed, no 1,000 bed institution is going to meet this situation adequately. The primary effort must be in the locality. These men are sick; they should not be in jails, but in the hospitals. To take care of them in the hospitals special wards must be constructed. The attending physicians must train themselves in the handling of the acute and chronic alcoholic. Then there must be a treatment center to which the problem drinker and some of those threatened with this affliction may go. From there they should return to their communities and be followed by their physicians until adjusted in society according to plan.

A State-wide plan such as this is necessary if the physician is to take over the alcoholic problem. Prevention of alcoholism is not the physician's business, but treatment of the sick is his business and he should be about it.

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DISCUSSION

DR. R. FINLEY GAYLE, Richmond: Dr. Wilson is to be congratulated upon bringing this most important subject to our attention. I am a little surprised at his statement that there are more non-drinkers in Virginia than there are drinkers, and I am also somewhat surprised at his statement of the per capita consumption of alcoholic liquors in this State. I think he said it was thirteen gallons per person in 1942.

It is not generally accepted that alcoholism is a disease and that it is not primarily a public-health problem but a psychiatric one. It is my opinion that a person who abuses himself with alcohol is a mentally sick individual and should be treated as such. Certainly the volitional sphere of his mind is affected, frequently the emotional side, and occasionally the intellectual.

Virginia owes it to these people that they be adequately treated. Certainly some provision should be made for the adequate care of these people, as there is for tuberculosis and as we hope some day there will be for the insane. Above all, scientific investigation and research should be conducted as to the cause and treatment.

There is in Virginia a commission which has been appointed to investigate the subject of alcoholism. Dr. C. B. Bowyer, who is here today, is its chairman. That commission has investigated the situation and will soon make its report to the Governor. I am not at liberty to divulge the contents of that report, but I hope Dr. Bowyer will tell you something about it. I can say that recommendations will be made that a separate institution for the treatment of alcoholics be established, not in connection with a state mental hospital, and that the purpose be not confinement and work on a farm as for criminals, but for scientific study and treatment. Research as to the cause of alcoholism should be one of the major objects. Research, not along in the psychogenic factors in alcoholism but in the neurophysiological, biochemical, and other fields, should be pursued. If the legislature will pass a statute to establish such an institution as will be recommended, Virginia will be in an enviable position as a pioneer in this field.

As to the treatment of the alcoholic, there is unfortunately no specific. I have failed ten times or more to every success I have had. The best results are gotten in those individuals who recognize that they have a problem and need help, who admit that they are sick and come for help of their own volition. Those who are committed to an institution or made to go to a doctor do poorly and

seldom get much benefit, and often had better have stayed at home.

The treatment of the acute alcoholic or simple drunk is of little medical importance, but with newer ideas of replacing vitamin and fluid loss the patient recovers quickly. I should like to have Dr. Wilson go a little more into detail on that treatment.

I hope that Dr. Wilson, in closing, will elaborate somewhat upon the conditioned-reflex treatment. There was

a report published not long ago of the treatment of a series of five hundred cases, of which eighty per cent remained well for a year and some forty-five per cent for five years.

The surface of the cause of alcoholism has really not been scratched. It is a challenge to medicine and psychiatry. If this institution is established, as we hope it will be, I do hope that there will be opportunity for some real study and research and that we may get somewhere with the subject.

Convalescent Serum Against Measles.

Convalescent measles serum may be useful not only as a complete protection against the disease but also as a means of treatment, Neils Dungal, M.D., Iceland, advises *The Journal of the American Medical Association* for May 6 in a report of the results from use of convalescent serum during an epidemic of measles in Iceland in 1943. The report comes from the Department of Pathology and Bacteriology, University of Iceland, Reykjavik. Convalescent serum is obtained from persons who have recovered from the disease.

Dr. Dungal says that "Convalescent serum is useful in two ways against measles: On the one hand, it may be applied to effect a complete protection against the disease, and, on the other, it may be used to alter the course of the disease in the following manner: prolongation of incubation period [the time between infection and the first appearance of symptoms], milder symptoms, lower fever, shorter illness, less complications and a corresponding quicker recovery. Some people want their children to contract measles, as it is usually more desirable to have the disease in childhood than to have to expect it some time later in life, when time is more precious. In order to effect a milder course of the disease the normal procedure should be to bring the child into contact with an infectious patient and give serum six to eight days later. If an adequate dose is given the child will in all probability get a slight attack of measles yet sufficient to confer a lifelong immunity.

"In some cases complete protection will always be indicated, particularly for patients suffering from tuberculosis or other diseases where an addition of measles must be considered as a dangerous complication.

"A therapeutic [treatment] use of convalescent serum may come into consideration, particularly during the first days of illness, when the disease has an alarming start, especially in patients with weakened resistance."

Of 203 persons who were given convalescent serum, Dr. Dungal says, "139, or 70 per cent, remained symptom free. Most of the others got the disease in a considerably milder degree than those not protected. The duration of the protection afforded by serum may last as long as thirty-six days at least. . . ."

County Medical Society Life Memberships and Endowment Funds.

In the July issue of the *Mississippi Valley Medical Journal* (Quincy, Ill.) Swanberg advocates the establishment of Endowment Funds and Life Membership plans in all but the smaller County Medical Societies. "This plan affords the member an opportunity of paying his full dues during his most productive years and while his income is greatest, thus avoiding the burden of dues later in life." Since Life Membership fees can be declared a professional expense when filing income taxes their actual cost is not great. The present era of high incomes and high income taxes thus provides an ideal time for making an investment in one's County Medical Society. The actual cost of a Life Membership is considerably less than the amount paid since 27 to 57 per cent (depending on the surtax net income) represents tax savings. If Life Membership fees are invested in war bonds and placed in an Endowment Fund it will further help the government finance the war, a patriotic undertaking of which every loyal American physician wants to be a part.

DIABETIC COMA*

WILLIAM R. JORDAN, M.D.,
Richmond, Virginia.

Not ten days ago I was called to see a woman who was dead when I arrived. Her brother gave me the following story: She had been well until six weeks ago, when she began to lose weight, became thirsty, passed a lot of urine and had severe cramps in her feet at night. She had gone downhill steadily and yesterday she began to vomit and to have deep and difficult breathing. This morning she became unconscious and remained so until death. She was brought to the hospital and died within twenty-five minutes. No doctor was called until just before death. Blood taken immediately after death showed a sugar content of 630 mg. and a carbon dioxide combining power of ten volumes per cent.

This case is tragic and doubly so because the treatment is effective in 90 per cent of the cases. It is discouraging to see a sick person for whom nothing can be done, and the doctor relishes seeing a patient whom he can help. Treatment of diabetic acidosis and coma offers abundant reward. It requires time but it pays dividends. Without treatment all such patients will die.

This paper is based on the study of twenty-eight patients seen by me in diabetic coma. This group comprises two types of patients. One type includes patients with obvious diabetic coma. The other type includes patients with diabetes, clinical acidosis and a CO₂ combining power of twenty volumes per cent or less. The diagnosis is important, but I do not quibble about it. The CO₂ level and the relative state of unconsciousness are unimportant as compared with the fact that a patient with severe diabetic acidosis is in danger of death unless prompt and vigorous treatment is given. More exact diagnosis may be essential in comparing different methods of treatment,¹ but the doctor who accepts the fact that a patient with diabetic acidosis needs such treatment in all likelihood will have the best results.

One sees patients with diabetes and a low CO₂ who have no diabetic acidosis. Such a case is No. 360. This man had a CO₂ of fifteen volumes per cent, due apparently entirely to uremic acidosis secondary to prostatic obstruction from which he died. That the CO₂ does not represent accurately the

severity of the acidosis is illustrated by case No. 433. This man required seventy units of insulin in a period of ten hours to bring him out of an acidosis with a CO₂ of twenty-five, yet on another occasion it took one hundred and eighty units of insulin before he responded when his CO₂ was thirty-four. Actually he was much more drowsy with the higher CO₂ than he was when it was twenty-five volumes per cent. Although he is not included in this series of cases, he could easily have become unconscious and died if treatment had been delayed. Nor does the blood sugar level help much in diagnosis. The highest blood sugar I have actually treated occurred in a man (case No. 538) with mesenteric thrombosis who had no clinical acidosis and whose CO₂ was thirty-six volumes per cent. His urine contained seven and six-tenths per cent sugar and no acetone, although his blood sugar was 1448 mg.

Manifestations of diabetic acidosis are well known, but may be briefly summarized. The initial symptoms usually occur over a period of two or three days, with excessive thirst and polyuria, gradually progressing to nausea and vomiting, air hunger and finally drowsiness and complete coma. Air hunger occurred in every case in this series, as did dehydration, although in two cases there was profuse sweating and this occurred only in the two cases which were fatal. I believe that sweating in diabetic coma indicates infection. This, coupled with an elevation of the temperature above normal, requires a search for some infection in the body. Only twelve of these cases were totally unconscious, but all of them were stuporous or nearly unconscious. That is, they could be aroused a little, but they would lapse into coma if left alone. The blood sugar level ranged from 367 to 1270 mg. There were three patients with a blood sugar level of above 1000 mg. The CO₂ combining power was not determined in all cases at the onset of treatment. However, in four cases it was ten volumes per cent or less and in one case was charted as plus or minus zero, which rose to less than nine volumes per cent, and subsequently to normal. In ten cases the coma was complicated by infection, which included a carbuncle, pneumonia, and extensive pulmonary tuberculosis. One of the most disturbing complications

*Read at the meeting of the Medical Society of Virginia in Roanoke, October 25-27, 1943.

was gastro-enteritis, interfering with food intake, so that all feeding had to be by either intravenous or subcutaneous route, and this in spite of very poor veins. In about half of the patients, treatment of the coma was delayed for one reason or another after the patient had been seen by a physician. In a few cases delay was due to lack of recognition of the condition. In one patient the local doctor recognized the condition and called me, but we had to wait until the patient became unconscious before we could give treatment because he was a Christian Scientist and, while conscious, refused medical aid.

As Joslin and others² have recently emphasized the backbone of treatment of diabetic coma is the prompt use of insulin in large amounts. Next in importance is the administration of fluids and salt. All other features of treatment are subsidiary to these two. Nevertheless, the patient's life hangs by such a slender thread that every aid should be extended to him, provided one keeps in mind at all times that insulin and saline solution are of foremost importance. Almost every totally unconscious adult patient in this series was given fifty units of the clear or quick-acting insulin every half hour for four doses. Subsequent dosage depended on the condition of the patient and his response to treatment. One thing I learned was that I did not know how much insulin any single patient would need and that frequent clinical observations, including the blood pressure and pulse rate, and examinations of the urine and blood sugar afford the only means of properly gauging the need of the patient. One small child was brought out of coma by his mother with twenty-five units of insulin, whereas one of the patients in this series in the hospital required nine hundred units in twenty-four hours and was still in coma and required five hundred and forty-five more units during the ensuing twenty-four hours. In this series of patients I saw no evidence that in any case too much insulin was given. On the other hand, I feel definitely that matters would have been helped by the prompt administration of larger amounts than I did prescribe. I have used exclusively the quick-acting clear insulin rather than protamine.

Insulin was begun promptly within the first half hour when the diagnosis was apparent. Only in cases of doubtful diagnosis was insulin delayed until the blood was analyzed. In most instances practically all the needed insulin was given within the first two hours. While the blood tests were being made normal saline was given intravenously. The

amount of saline given varied in general between 2,000 and 3,000 cc. in the first five hours. In one severe patient 6½ liters of saline, with or without glucose, was given in the first twelve hours in addition to 1,000 cc. of whole blood. Root and Rise-man³ have reported patients receiving 11,000 cc. of salt solution in the course of a few hours. In two patients in my series continuous intravenous infusion was given. The above authors recommend huge doses of insulin and saline for patients with a history of prolonged acidosis and lack of diabetic control, including unconsciousness for more than six hours and repeated vomiting, and on examination evidence of circulatory collapse, including blood pressure of below 90 mm. of mercury, and, finally, laboratory findings of severe coma with a CO₂ below 10 volumes per cent and a blood sugar of over 700 mg.

Other features of treatment include various measures to support circulation. Patients were kept warm under blankets with hot water bottles outside the blankets. Adrenalin and caffeine intravenously or subcutaneously were given when needed. The dilated stomach was washed out with a stomach tube and food and fluids by mouth were withheld for at least four hours. All of these measures were instituted as soon as the blood and urine had been obtained for examination and the physical examination had been done. Of course, insulin is usually given before any examination is made where the diagnosis is obvious. Subsequent blood sugar determinations should be made within three or four hours and as often thereafter as is indicated by the condition of the patient. The analyses were made at once and reported immediately. An indwelling catheter enabled me to measure the volume of urine as well as the sugar and acetone content every hour. The danger from urinary tract infection seemed not so great as the danger from coma itself. In patients with severe localized infection, such as a large abscess, incision and drainage may be carried out after the first few hours of treatment. After the blood sugar has fallen, carbohydrate in the form of glucose or fruit juice is given to the extent of 100 g. within the first twenty-four hours.

With such treatment the results in this series are as follows: Of 28 patients, two died in coma, an immediate mortality rate of 7 per cent. A third patient died three weeks after delivery from coma, the cause of death being a spreading staphylococcal infection from an abscessed tooth present at the time of coma. A fourth patient died three weeks after

recovery from coma of extensive pulmonary tuberculosis. One other patient died five weeks after recovery from coma as a result of prolonged hypoglycemia as a result of failure to lower the insulin dosage when improvement occurred at home.

The first patient dying in coma was a 29 year old woman, case No. 196, who had developed mild diabetes $2\frac{1}{2}$ years before. It was easily regulated by diet alone. After the initial regulation she did not see a doctor until the time of coma. Several days before death she was taken with an acute respiratory infection. Seven hours before death she called a local doctor who thought the dyspnea, or rather air hunger, was due to heart disease. He called a cardiologist, who made a diagnosis of diabetic acidosis and sent her into the hospital. At that time he could obtain no blood pressure. The patient was emaciated, totally unconscious, pulseless, and had an absent blood pressure and a bone-dry mouth, although a moist, sweating skin. There were moderate hyperpnea and moderately soft eyeballs. The heart rate was 152. There were tracheal rales and fine rales at the bases of both lungs. Two hundred units of regular insulin and 1500 cc. of normal saline were given within an hour and forty minutes. The patient died ten minutes later. A purulent pneumonitis yielding a pure culture of staphylococcus aureus was found at autopsy.

The second case, No. 490, was very similar. She was a young woman of twenty years who had had diabetes for twelve years, but she had seen no doctor for the past four years. She was brought into the hospital in a totally unconscious state. Her skin was moist, cold, and mottled. There was Kussmaul breathing and the eyeballs were so soft that they were mushy. No blood pressure could be obtained. Her temperature was 105.5. All reflexes were entirely absent. There was a small area of localized infection on the skin of the right thigh. One hundred units of insulin were given immediately and this was followed by 50 units four times within the first two hours. At the same time continuous infusion of normal saline was begun. Ephedrine was given intramuscularly and intravenously. Caffeine was likewise administered. The blood pressure gradually climbed to 98/40 and the blood sugar fell to 250 mg. within four hours. After this initial improvement, the temperature rose gradually to 108. The neck became and remained stiff. Trembling and twitching of the body occurred at times with one definite convulsion. Blood pressure gradually fell again in spite of two transfusions of whole

blood and continuous intravenous saline. Death occurred 15 hours after admission in spite of the blood sugar remaining in the neighborhood of 200 mg. and a rise in the CO_2 to a level of twenty-four volumes per cent. Autopsy showed no evidence of infection although the heart's blood yielded a positive culture of staphylococcus aureus and a bacillus resembling *B. subtilis*. This patient resembled those cases reported by Dillon, Riggs and Dyer⁴ with brain damage from diabetic acidosis.

Case No. 55 was a case very similar to the previous one. In 1935 she was 30 years old, at which time I first saw her. Until 1937 she continued visits to me and to her local doctor. From that time to June, 1943, she saw no doctor at all. At that time she developed typical symptoms of diabetic acidosis, but, unfortunately, they were overlooked until the following day when diabetic coma was apparent. She was admitted to the hospital under the care of another physician who reported her death to me.

Case No. 623 was very similar. In June, 1942, this 36 year old diabetic woman refused diabetic treatment. Fourteen months later she died of diabetic coma an hour and a half after being brought to the hospital.

All four of these cases were needless deaths. All were known diabetics, and all were young and healthy women in other respects. Routine visits to the doctor every two or three months should have enabled them to have avoided such an end.

In summary, it would seem from a study of these cases, which were seen in a group of over 850 diabetic patients, that diabetic coma is somewhat unusual but that it does occur. Instruction of the patient in the importance of routine visits to the doctor and in prompt attention to any intercurring disease or upset in the diabetes should lessen the incidence of diabetic coma and improve the results of treatment. Death from diabetic coma may occur so quickly that the major part of the treatment should be given within the first two or three hours in order to obtain the effects of this treatment. Any delay in treatment can prolong the acidosis and the danger therefrom. Frequent clinical and laboratory observations help to prevent relapses and hasten convalescence. Emphasis should be placed on large doses of insulin. Second in importance is the administration of large amounts of saline solution intravenously. Profound coma, a sweating skin, low or absent blood pressure, anuria and a CO_2 level of less than 12 volumes per cent indicate a grave prognosis and the need for insulin and intravenous

fluids in much larger amounts than are customarily used. During the period of convalescence the low resistance of the patient to disease must be remembered and general care should be emphasized.

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Medical Arts Building.

DISCUSSION

DR. BLANTON P. SEWARD, Roanoke: Dr. Jordan's subject is timely as coma still is a frequently occurring complication of diabetes. It seems scarcely necessary to say that he emphasized the point that successful treatment of coma must be aggressive, and in some instances heroic. It consists, as he further emphasized, in giving a sufficient amount of insulin to restore the metabolism of carbohydrates, at the same time administering fluid to overcome hypohydration and to combat shock.

Those principles of treatment seem simple when stated, but not so simple when we attempt to apply them. For example, there is no way of telling how much insulin or fluid will be required since each case is an individual problem. Generally, however, a large amount of insulin must be given, and the longer the duration of coma the larger the amount that will be required. If laboratory facilities for the estimation of blood sugar are not available, the effect of insulin may be observed by the qualitative Benedict test. As long as sugar is being excreted, hyperglycemia usually exists, and there is no danger of inducing insulin shock. If a green or blue reaction of the urine with Benedict's solution is obtained, yet acidosis persists as may be observed in an occasional case, glucose should be given, although some clinicians give sodium bicarbonate instead of glucose. At this stage the patient often can take orange juice and other fluids by mouth.

Comatose patients also need fluid to overcome the effects on the body tissues—hypohydration—and on the blood—concentration due to the loss of plasma—through nature's effort to eliminate the ketone bodies. The large amount of fluid lost, probably beginning a few days before the onset of coma and increasing with the accumulation of ketone bodies, and the duration of coma usually necessitate the administration of a large quantity of fluid, varying from a few to ten or more quarts.

The majority of patients recover from coma when sufficient amounts of insulin and fluids are promptly given. As Dr. Jordan stated, some cases will also require supportive treatment to combat the severer degrees of shock that are associated with circulatory failure. The results

he obtained in his series of cases encourage us when we are called upon to treat a patient in coma.

DR. R. B. GRINNAN, JR., Norfolk: Mr. Chairman, my remarks will not be in the nature of discussion but to ask some questions. First, I should like to ask about sodium lactate and what Dr. Jordan thinks about the administration of this. I should like to know, too, if he thinks cortin would be of any benefit for administration to these patients in their collapsed state. I also want to ask him about his drugs, adrenalin and caffeine—how he uses them and what he expects to accomplish with them.

There is another thing about which I should like to ask Dr. Jordan. He says very little about the administration of intravenous glucose to these patients in diabetic coma. I was taught to give it, and I always give glucose in saline to my patients with diabetic coma. Of course, I give insulin also. I should like to find out if he has more or less given up the practice, if he ever did use that, of giving glucose and insulin together. I should like to know, too, what the status there is, because my own practice has been usually to give glucose with the saline. Has he given up that practice, or does he still follow it?

DR. H. B. MULHOLLAND, Charlottesville: I should like to ask Dr. Jordan what he thinks about giving sodium lactate to these patients. It seems to me that one of the things we should attempt to accomplish is to restore the normal physiological condition as soon as possible and it has been demonstrated that you can bring the carbon-dioxide content of the blood back to normal sooner by giving sodium lactate. In addition, base and fluid to combat dehydration is supplied.

DR. JORDAN, closing the discussion: I appreciate the discussion by the gentlemen.

As to Dr. Seward's question about the vitamins, I have used vitamins intravenously in one case without any apparent influence. The patient died. I do not know that there is any real reason to think vitamin therapy would have any effect.

Dr. Grinnan asked several questions to which I have no answer at all. As to cortin, I have never seen it used. I have no reports at all on it.

I have seen ephedrin used to restore the blood pressure. Anything that will prolong the patient's life for even an hour is worth while in such an acute condition, because if we can prolong life for even a few hours we may be able to save the patient.

I see no advantage in giving glucose to any patient with an already high blood sugar. But where acidosis persists after reduction in the blood sugar I think we must give some glucose to combat the acidosis.

As to sodium lactate, I expect both Dr. Grinnan and Dr. Mulholland have used it. I have not. I think one of the important things is not to be distracted from the main issues. If giving sodium lactate will not take your mind off giving saline and insulin, I think it may help. I have seen it given, and it does relieve the hyperpnea sooner than other measures. I certainly should not hesitate to use it in any case that did not seem to be progressing properly. In the one that we had we had so many things to do that I just did not have time for it.

RECURRENT, NON-TRAUMATIC RUPTURE OF THE URINARY BLADDER—A CASE REPORT

FRANK POLE, M.D.,
Richmond, Virginia.

Rupture of the bladder is a common occurrence and the usual case presents little to warrant a detailed report. But the vast majority of bladder ruptures are traumatic, occurring typically when the full bladder is subjected to a crushing blow or when the bladder is punctured by fragments of fractured bones of the pelvis. True spontaneous rupture very rarely, if ever, occurs, but the term "spontaneous" is often used to describe the case in which there is no history of trauma. The etiological factor in most cases of "spontaneous" rupture is pre-existing disease of the bladder wall or chronic distention. Even under these circumstances, rupture of the bladder in the absence of trauma has been described in the literature as being very rare.

Diagnosis of rupture of the bladder is not difficult in the usual case of trauma if the possibility of such a condition is borne in mind. Delay in making a diagnosis is usually due to the fact that the patient's more obvious injuries and poor general condition distract attention from the urinary tract. Shock is often out of proportion to the skeletal injuries suffered by the patient. Hematuria, dysuria, or inability to void may be present. Signs of peritoneal irritation and evidences of true peritonitis may later appear. In every case of suspected bladder rupture, diagnosis should be made as quickly as possible, utilizing the procedures of catheterization, cystography, cystoscopy, or even exploration if necessary.

Treatment can be summarized very briefly as consisting of (1) treatment of shock and (2) establishment of free drainage. Sufficiently free drainage cannot be obtained by the use of a urethral catheter or perineal urethrotomy, and a suprapubic cystostomy is always indicated. Drainage of the perivesical tissues and of the peritoneal cavity, if the latter is involved, is performed as a matter of routine, and free bladder drainage is absolutely essential.

The gravity of the prognosis in cases of bladder rupture is indicated by Campbell, whose summary of case reports by other authors showed that 60 to 80 per cent of all patients with rupture of the bladder die. Campbell himself reported fifty-five cases in which the mortality of intraperitoneal rupture was 73.5 per cent and, of extraperitoneal rupture,

42.9 per cent. Delay in treatment, and infection of the urine are two of the most important factors in increasing the mortality rate.

With the above in mind, the following case was considered worth reporting for several reasons. First, the rare condition of non-traumatic bladder rupture occurred in this patient not once, but twice. Second, the bad prognostic features of infection and delay in treatment were both present on both occasions. Third, the patient recovered.

C. L. B. was admitted to St. Philip Hospital on June 4, 1943, with a history of having developed a severe pain in his lower abdomen three days previously while lifting a heavy weight. The pain had become progressively worse, nausea and vomiting were severe, and he had had several chills. Urine output had become progressively more scanty. Examination revealed a thirty-two year old colored male, obviously acutely ill. Temperature was 102, heart and lungs normal. The abdomen was moderately distended, with definite muscular rigidity throughout. There was generalized abdominal tenderness, most marked below the umbilicus. On auscultation, no peristalsis was heard. There were old McBurney and suprapubic scars. Inspection of the genitalia showed a redundant prepuce beneath which a ragged mass of scar tissue represented the glans. There was no demonstrable urethral meatus in this area, but, on the ventral surface of the penis, there were two fistulous openings through which the patient said he had been voiding. The perineum was thickened over the urethra and presented an old surgical scar. The white blood count was 20,100 with ninety-two per cent polymorphonuclear leukocytes.

Review of this patient's hospital record revealed three previous admissions. The first was on June 13, 1940, when he gave a history of gonorrheal urethritis and chancroids in 1935, followed by gradually progressive obstructive symptoms. He was in complete urinary retention on this admission, and a suprapubic trocar drainage was done when the urethra was found to be completely obstructed by strictures. Leakage of urine around the suprapubic catheter required open incision and drainage of an abscess in the space of Retzius on June 19, six days

after the trocar puncture. A periurethral abscess was incised and drained on June 20. He left the hospital on July 28, 1940, voiding through his urethra after the passage of small sounds had been effected.

His second admission had been on September 3, 1941, after the patient had failed to attend the outpatient clinic for treatment following his previous discharge from the hospital. On this occasion, a large perineal periurethral abscess was incised and drained, and the bladder was drained by suprapubic cystostomy. He was discharged on September 19, 1941, after a filiform was successfully passed and urethral micturition re-established. No sound could be passed during the hospital stay, and the patient again failed to report to the clinic for further treatment.

The third admission was on February 1, 1942, to the surgical service. Impassable strictures were again found, but the patient maintained that he could void satisfactorily. He complained of abdominal pain, and nausea and vomiting of ten days' duration. The white blood count was 25,800, temperature 103.2, and his lower abdomen was acutely tender. Laparotomy was done at once, a normal appendix removed, and a large intraperitoneal pelvic abscess drained. It was noted that the bladder was distended, but an adherent loop of intestine over the anterior aspect of the bladder made cystostomy seem impractical, if not impossible. The patient healed without complication with the exception of a rise in white blood cell count to 40,800 a week after the operation. He was discharged on the nineteenth post-operative day.

The patient never attended the urology clinic but was seen in the surgical clinic in May, 1942, for a dog bite of the arm, and in July, 1942, for a stab wound of the shoulder.

With this past history, the diagnosis of pathological rupture of the bladder was obvious at the time of his 1943 admission. He was taken to the operating room at once and a low midline incision made. On opening the peritoneum, a large amount of purulent fluid was found. There was a generalized peritonitis, with no sign of any localized abscess. When the intestines were retracted, the bladder was palpated as a thick, inelastic mass. An opening was demonstrated which extended through the peritoneum and bladder wall into the bladder. The actual perforation was about $\frac{1}{2}$ cm. in diameter and was surrounded by a necrotic area about 1 cm.

in diameter. The perforation was closed with three chromic catgut mattress sutures, the purulent fluid aspirated from the peritoneal cavity, and a mixture of sulfanilamide and sulfathiazole powder was sprinkled into the cavity. A penrose drain was brought out from the point of perforation and the peritoneum and abdominal wall closed loosely around this drain. A large mushroom tube was then placed into the bladder through a separate suprapubic stab wound. The patient received 500 cc. of citrated blood and 75 grains of sodium sulfathiazole by vein immediately post-operative.

The patient's course was surprisingly smooth. His temperature subsided steadily and he complained of hunger on the second post-operative day. No further signs of peritonitis were evident.

On July 6, 1943, a plastic operation was performed on the urethra, consisting of excision of the fistulae, three separate urethrotomies for the elimination of strictures, and the formation of a hypospadiac meatus, just behind the distorted glans. The patient was discharged July 21, 1943. His wounds were well healed, he was voiding well, and a size 22 Fr. sound could be passed easily.

SUMMARY

1. True spontaneous rupture of the bladder is extremely rare, and any non-traumatic bladder rupture is very uncommon.
2. The prognosis in any case of bladder rupture is very grave; infection and delay in treatment greatly increase the gravity of the prognosis.
3. The fundamental treatment of bladder rupture is early operation and establishment of free drainage.
4. A case is reported in which there was recurrent, non-traumatic bladder rupture, with recovery in spite of infection and delayed treatment.

Stuart Circle Hospital.

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CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE,
MEDICAL SOCIETY OF VIRGINIA

This patient was a white woman forty years of age. She had seven other children in addition to a miscarriage which ended her first pregnancy. This miscarriage was associated with hypertension and nephritis. The second baby was delivered prematurely on account of eclampsia. These were followed by five uncomplicated pregnancies and labors resulting in five living children. The last, or eighth, pregnancy resulted in eclampsia and death. There was no prenatal care. She was first seen by a doctor the night before her convulsion; she was given some medicine but it is not known what this medicine was and whether it was actually taken. A convulsion occurred eight hours later. This doctor could not be reached so another was called who sent her to the hospital. There is no record of the blood pressure by either doctor, although the blood pressure is said to have been elevated between pregnancies. She had been advised not to become pregnant again.

HOSPITAL RECORD: She was admitted in coma but continued to have convulsions. The blood pressure was 178/132 and no fetal heart sounds were heard.

TREATMENT: Fifty per cent magnesium sulphate, 2 cc., was given in the muscle. This was repeated in one hour; chloroform was given to control the convulsions. Spontaneous delivery of an eight month, stillborn fetus occurred soon afterwards. Pitocin, 1 cc., was given five minutes later. Twenty minutes later, the blood pressure was 180/136. Sodium luminal was given hypodermically. Ten per cent glucose, 1,000 cc., in water, was given intravenously. Six hours later, 10 per cent glucose,

1,000 cc., in saline, was given by vein. The patient died thirteen hours after admission.

COMMENT: This is classed as a preventable obstetric death. There was obvious ignorance and neglect on the part of the patient and her family. There was no prenatal care. The treatment given was not that which is usually considered suitable or which usually has given best results. Convulsions with the first pregnancy do not necessarily contraindicate subsequent pregnancies. If the blood pressure returns to normal and remains so, there may be no trouble. But continued hypertension and evidence of nephritis does increase greatly the risk in future pregnancies. This risk increases with each subsequent pregnancy. Suitable contraceptives, or better still, sterilization, would have been the answer to this problem.

When this patient was seen by the first doctor, she should have been hospitalized without waiting for convulsions. After admission, magnesium sulphate, 20 cc., 10 per cent, given intravenously about once an hour until convulsions were controlled would probably have been found to be helpful. Magnesium sulphate in the muscle is probably not as effective for this purpose. Other treatment recommended would have been 300 cc. of 25 per cent glucose in distilled water in the vein and repeated in four hours. No saline should have been given. It is possible that digitalization may have been of value. The amount of intravenous fluids which was given was perhaps excessive. Continuous oxygen administration may have been helpful. Chloroform on account of its toxicity, should not have been administered.

Schering Issues Revised "Handy Index to Hormone Therapy".

A completely modernized version of Schering's "Handy Index to Hormone Therapy" has just been made available to physicians and pharmacists. This is a useful compilation of data in the hormone field, covering indications, pathogenesis, therapy, rationale and dosage. These data are presented in a highly compact index, bound on one side with a metal spiral binder and protected by a transparent acetate cover. Each therapeutic indication and hormone preparation is attractively tabbed for ready reference. In

order to assemble the data compressed into this 3½ inch by 5 inch index, considerable source material was sifted for important factual contributions. This material has now been brought up-to-date. All indications have been examined in the light of the most recent findings, and many indications which were in the experimental phase at the time of first publication have been added, with specific uniform dosage.

Copies of the "Handy Index" are available to physicians from the Medical Research Division, Schering Corporation, Bloomfield, New Jersey.

PUBLIC HEALTH

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia.

The report of the Bureau of Communicable Diseases of the State Department of Health for July, 1944, as compared with the same month in 1943, and for the period of January through July, 1944, compared with the same period in 1943, follows:

	July 1944	July 1943	Jan.- July 1944	Jan.- July 1943
Typhoid and Paratyphoid Fever	16	33	69	103
Diarrhea and Dysentery	1583	1697	3122	2625
Measles	316	317	16971	9185
Scarlet Fever	77	56	1927	1089
Diphtheria	7	18	123	181
Poliomyelitis	126	6	140	21
Meningitis	32	52	427	692
Undulant Fever	4	9	29	23
Rocky Mountain Spotted Fever	21	19	42	28
Tularemia	6	1	33	30

INFANTILE PARALYSIS

The current increase in infantile paralysis began gradually in the month of June, with eight cases.

It developed rapidly during the month of July, with one hundred and twenty-five cases, and by August 15 ninety-eight additional cases had developed, making a total since June 1 of two hundred and thirty-one.

The majority of the cases have been reported west of Lynchburg and have affected many southwest Virginia counties. A co-operative plan for the emergency hospitalization of all cases has been set up jointly with the State Health Department, the National Foundation for Infantile Paralysis and the American Red Cross. It has been necessary to set up additional hospital facilities in several localities in order to provide the necessary care. The first of these was established at the Lynchburg General

Hospital on July 20, utilizing the fourteen-bed ward designed as an isolation unit. This ward is staffed and equipped to render the most approved and successful methods known for the treatment of acute infantile paralysis. On the following day, July 21, a ward was opened at the Roanoke Hospital with a bed capacity of twenty-four, using the same methods as the Lynchburg General Hospital. One week later an additional fifteen-bed unit was opened at the Lynchburg General Hospital to take care of the pressing need for this community. On August 1 an eighteen-bed unit to take care of children being released from quarantine was opened at the University Hospital. This ward may be extended to accommodate fifty-two cases should the occasion arise. In Richmond the Crippled Children's Hospital prepared to admit up to fifty cases after they have been released from quarantine. The Hospital Division of the Medical College of Virginia has opened a ward to care for twenty acute white and ten acute Negro cases. In Norfolk arrangements have been completed for the use of Henry A. Wise Isolation Hospital for both white and Negro. This unit has a bed capacity of eighteen and when it is filled the entire pediatric ward of the de Paul Hospital will be taken over for isolation ward. Negroes will be admitted to the Lynchburg General Hospital, the Medical College of Virginia Hospital and the two Norfolk hospitals. Transportation by ambulance is necessary for all acute cases and cost will be provided for those unable to pay. Physicians are requested to contact their local Health Department or communicate with the superintendent of any of the above named hospitals in regard to admission of patients.

Course for Training Technicians in Maintenance of Equipment.

The Army Medical Department has recently made provision to train enlisted personnel in the maintenance of the expensive and elaborate medical

equipment used at Army station and general hospitals throughout the country. The technicians are trained at the Medical Supply Service School, St. Louis, Missouri, where classes enter every month. The prerequisite includes basic military training and a high school education.

PROGRAM

(PRELIMINARY)

96TH ANNUAL MEETING

MEDICAL SOCIETY OF VIRGINIA

JOHN MARSHALL HOTEL, RICHMOND

October 23, 24 and 25, 1944

BUSINESS SESSIONS

Monday, October 23

9:00 A.M.

REGISTRATION

9:30 A.M.

COUNCIL—Byrd Room, Mezzanine

11:00 A.M.

HOUSE OF DELEGATES—Washington Room,
Mezzanine

3:00 P.M.

HOUSE OF DELEGATES—Washington Room,
Mezzanine

Tuesday, October 24

HOUSE OF DELEGATES—Time and Place to be
announced

SCIENTIFIC SESSIONS

Monday, October 23

8:30 P.M.

Virginia Room

Open to Public

Call to Order—HARVEY B. HAAG, M.D., Chairman,
Committee on Arrangements

Invocation—REVEREND THOMAS E. O'CONNELL

Introduction of E. H. TERRELL, M.D., President,
Richmond Academy of Medicine

Address of Welcome—HON. W. C. HERBERT, Mayor
of Richmond

Introduction of President—HARVEY B. HAAG, M.D.

President's Address—C. B. BOWYER, M.D., Stonega

Memorial Hour—J. BOLLING JONES, M.D., Peters-
burg, Chairman Membership Committee

Address by Invited Guest—HON. COLGATE W.
DARDEN, JR., Governor of Virginia

Tuesday, October 24

9:30 A.M.

Virginia Room

CONGENITAL PYLORIC STENOSIS WITH SERIES OF
CASES—

Frank S. Johns, M.D., Richmond

James B. Stone, M.D., Richmond

Congenital pyloric stenosis is a condition alarming to the mother, but one which can be readily diagnosed by the referring pediatrician and successfully operated on by surgeon. Prompt recognition of symptoms is an important factor in the baby's surgical recovery. Modern pre-operative preparation is vital. Time of operation, type of anesthesia, and post-operative care determine outcome of each case. Type of operation *per se* is definitely standardized.

Discussion—W. Lowndes Peple, M.D., Richmond

DERMATITIS IN THE MUNITIONS INDUSTRY—James
Q. Gant, Jr., M.D., U. S. Public Health Serv-
ice, Bethesda, Maryland

This deals with dermatological problems which have arisen in the munitions industry during the present war. This work represents studies made in many munitions plants by the Dermatoses Section of the Industrial Hygiene Division of the U. S. Public Health Service. *Illustrated with lantern slides in color.*

Discussion—Thomas W. Murrell, M.D., Rich-
mond

ERYTHROBLASTOSIS AND THE RH FACTOR—Paul
Hogg, M.D., Newport News

Erythroblastosis is a relatively new disease seen in the newborn. It is characterized by a typical blood picture and the condition carries a high mortality rate. The Rh-Factor is an antigen which is responsible for the disease. It is transmitted from the father to the baby.

Discussion—Harvey Bland, M.D., Newport News

FURTHER CLINICAL STUDIES IN DISTURBANCES OF
ACID BASE BALANCE—Alex F. Hartmann,
M.D., *Invited Guest*, St. Louis, Missouri

REPORT OF FIVE CASES OF MENINGITIS TREATED
EMPIRICALLY WITH SULFANILAMIDE UNDER
RURAL AND LOW ECONOMIC CONDITIONS—
Challis H. Dawson, M.D., Suffolk
Hubert D. Crow, M.D., Courtland

These reports should be of value to physicians seeing cases in rural areas where laboratory facilities are not available and spinal punctures are impractical or impossible.

Discussion—McLemore Birdsong, M.D., University

NON-SURGICAL THERAPY OF EPILEPSY—
Hugh Page Newbill, M.D., University
Randolph Leigh, Jr., M.D., University

Review of the non-surgical therapy of epilepsy, emphasizing individual therapy which should include medical therapy, physiotherapy, psychological therapy, and social therapy.

Discussion—John M. Meredith, M.D., Richmond

AN INVESTIGATION OF ALLERGY IN ROUTINE NOSE
AND THROAT PRACTICE: A REPORT OF ONE
HUNDRED PRIVATE CASES—Fred E. Hamlin,
M.D., Roanoke

The otolaryngologist should always keep in mind that his specialty is not isolated, but is closely allied to internal medicine, and good results are often obtained by eliminating systemic disturbances by means of close cooperation with the internist and patient.

Discussion—W. Randolph Graham, M.D., Richmond

Visit Scientific and Technical Exhibits

Tuesday, October 24

3:00 P.M.

Clinics Sponsored by Medical College of Virginia
Wm. H. Higgins, M.D., *Chairman*

6:00 P.M.

COCKTAIL PARTY

7:00 P.M.

SUBSCRIPTION DINNER AND ENTERTAINMENT

Wednesday October 25

9:30 A.M.

Virginia Room

RADIATION AND NEUROSURGERY IN ADVANCED PAINFUL MALIGNANCY—

George Cooper, Jr., M.D., University
Vincent W. Archer, M.D., University

Attention is called to the role of radiation and neurosurgery in the handling of late cancer. The possibilities for relief of pain and prolongation of active life provided by these means should be fully exploited.

Discussion—John M. Meredith, M.D., Richmond

PARTIAL DUODENOPANCREATECTOMY: ITS USE IN
THE TREATMENT OF PANCREATIC MALIGNANCY: CASE REPORT—Herbert C. Lee, M.D.,
Richmond

Since the first successful pancreatectomy for carcinoma five years ago, several cases have been reported. The author reports a case of partial duodenopancreatectomy. The physiology involved in the removal of the pancreas is discussed, including the experimental work on this subject. The similarity between congenital fibrosis of the pancreas and a pancreatectomized adult is also discussed along with methods of treatment for this condition. Case reports and slides.

Discussion—Carrington Williams, M.D., Richmond

PENICILLIN—Wallace E. Herrell, M.D., *Invited*
Guest, Mayo Clinic, Rochester, Minn.

General Discussion

CONGENITAL HEART DISEASE: A PRESENTATION OF
CASES ILLUSTRATING SOME OF THE MORE
COMMON TYPES—Paul D. Camp, M.D., Richmond

Congenital heart disease should, if possible, be differentiated from other types, especially rheumatic and luetic and occasionally hypertensive heart disease. Points of differential diagnosis will be considered. Cases illustrating some of the more common types will be presented. Treatment will be discussed briefly.

Discussion—Dean B. Cole, M.D., Richmond

Special Meetings

Tuesday, October 24

8:00 A. M.

BREAKFAST—ALUMNI ASSOCIATION, MEDICAL COLLEGE OF VIRGINIA.

Luncheon Meetings

1:15 P. M.

AMERICAN COLLEGE OF PHYSICIANS, VIRGINIA SECTION.

OBSTETRICAL AND GYNECOLOGICAL SOCIETY.

ORTHOPEDIC SOCIETY.

PEDIATRIC SOCIETY.

RADIOLOGICAL SOCIETY.

UROLOGICAL SOCIETY.

Wednesday, October 25

1:30 P. M.

VIRGINIA SOCIETY OF CHEST PHYSICIANS—Luncheon and meeting at Pine Camp.

TECHNICAL EXHIBITS

Technical exhibits will be set up in the lobby and on the mezzanine. The following is a list of the exhibitors, with a brief description of each exhibit:

A. S. Aloe Company

(Booth 5, Lobby)

A. S. Aloe Company will exhibit a cross-section of its complete line of surgical and laboratory instruments, equipment and supplies. Featured will be American made stainless steel surgical instruments and exclusive Aloe Specialties such as the Goth Sulfonamide Test Kit, etc. Messrs. W. O. Hester and J. C. Parrish, Aloe-Virginia representatives will be in charge.

The Borden Company

(Booth 19, Lobby)

Visit the Borden booth and learn about the new infant foods of unsurpassed quality. Biolac, the distinctive new *liquid* infant food, affording convenience, economy, and optimal nutrition is now packaged in the new 13-ounce wartime tin. Stop by for feeding directions! New Improved Dryco affords quicker solubility, lower cost, and increased vitamin potencies. Mull-Soy, the emulsified soy bean food for infants, children and adults allergic to milk. Borden's Beta Lactose is *nature's* carbohydrate in an improved, readily soluble form.

The Bovine Company

(See Wyeth, Inc.)

Camel Cigarettes

(Booth 22, Lobby)

Camel Cigarettes will exhibit large detailed photographs of equipment used in comparative tests of the five largest-selling brands of cigarettes. Dramatic visualization of nicotine absorption in the human respiratory tract from cigarette smoke will be demonstrated.

Ciba Pharmaceutical Products, Inc.

(Booth 21, Lobby)

Physicians are invited to attend our display. Representatives will be in attendance to answer all questions in regard to Ciba specialties. Featured will be Metadren Linguets, acclaimed by many doctors as a very potent androgenic substance for sublingual use. Clinical investigations indicate that this method of sublingual administration results in greater potency. Also Privine, a powerful nasal vasoconstrictor of prolonged action, a product which has gained considerable recognition in its field.

The Coca-Cola Company

(Booth 27, Mezzanine)

"Coca-Cola" will be served to those attending the convention with the compliments of The Coca-Cola Company.

Doak and Company, Inc.

(Booth 3, Lobby)

Doak Company exhibits nationally recognized dermatological preparations, including "Buro-Sol" (Aluminum Acetate) soluble powder and cream, "Lotio Alsulfa" colloidal sulfur lotion indicated in acne, "Tar Distillate" Doak and "Tarpaste", carefully controlled tar preparations indicated in eczema and "Heliobrom" powder and lotion, as indicated in pruritus. Clinical trial material available on request.

C. B. Fleet Company, Inc.

(Booth 30, Mezzanine)

Many physicians take advantage of our brief annual call and our attendance at conventions for two purposes:

1. To be reminded of such fundamental, but easily forgotten facts as the biliary, buffer and cleansing action of Phospho-Soda (Fleet). This helps them in their daily prescribing.

2. To learn of such developments as its new uses in famous hospitals and clinics, its value in geriatrics, its significance in the growing field of tropical medicine. This broadens its usefulness to them.

Since our ability to detail Phospho-Soda (Fleet) is so sharply limited in these times, please use us generously at your convention for these and any other purposes.

General Electric X-Ray Corporation

(Booth 23, Lobby)

Included in G. E. X-Ray's exhibit this year will be a display and demonstration of the Stader Splint for the treatment of fractures by external skeletal fixation. This device, which obviates the use of special extension apparatus, reduction frames, and plaster casts, combines in a single compact unit the means for not only accurately controlling reduction, but also for securely retaining fixation. A close-up study of this instrument will prove interesting.

Holland-Rantos Company, Inc.

(Booth 7, Lobby)

A cordial invitation is extended to all attending physicians to visit the Holland-Rantos Company, Inc., booth where on display will be the complete Koromex line. Featured this year is the Koromex Set Complete, the outstanding complete unit for contraceptive technique. Professional representatives will be pleased to supply you with all the information on the use of this set, and other products.

Copies of the Dickinson-Freret fitting charts will be given to all interested physicians.

Eli Lilly and Company

(Booth 12, Lobby)

The Lilly exhibit will feature an anatomical model illustrating the technics of caudal and spinal anesthesia. Lilly products will be on display, and medical service representatives will be present to assist visiting physicians in every possible way.

J. B. Lippincott Company

(Booth 31, Lobby)

Among books on display at the Lippincott Booth are: *Bunnell Surgery of the Hand*; Lull and Hingson *Control of Pain in Childbirth*; Thorek *Modern Surgical Technic*, War Edition; Thorek *Surgical Errors and Safeguards*; Strecker *Fundamentals of Psychiatry*. Mr. Duckett will welcome his Virginia friends to see new Lippincott books first-hand.

Mead Johnson & Company

(Booth 9, Lobby)

"Servamus Fidem" means We Are Keeping the Faith. Almost every physician thinks of Mead Johnson & Company as the maker of Dextri-Maltose, Pabulum, Oleum Percomorphum, and other infant diet materials—including the new pre-cooked oatmeal cereal, Pabena. But not all physicians are aware of the many helpful services this progressive company offers physicians. A visit to Booth No. 9 will be time well spent.

Ortho Products, Inc.

(Booth 8, Lobby)

Ortho's exhibit will feature their well-known products for the control of conception. Booklets, reprints, etc. will be distributed dealing with the various methods. Also exhibited will be Ortho's new gynecic pharmaceuticals—Hexital, oral therapy for the treatment of the menopause; Nutri-Sal, a pre-coital douche powder for the promotion of fertility; Aci-jel, for vaginal infections such as trichomonas vaginitis and monilia vulvovaginitis.

Petrogalar Laboratories

(See Wyeth, Inc.)

Peoples Service Drug Stores

(Booth 26, Lobby)

Nothing pleases us more than our standing in the communities in which we have stores. We feel we are a part of each such community. The helpful hands of our professional pharmacists are always at your service. The ever-increasing number of prescriptions filled by us each year speaks for itself, and the confidence placed in us by you and your patients, for which we thank you kindly.

Philip Morris and Company, Ltd., Inc.

(Booth 18, Lobby)

Philip Morris and Company will demonstrate the method by which it was found that Philip Morris Ciga-

rettes, in which diethylene glycol is used as the hygroscopic agent, are less irritating than other cigarettes. Their representative will be happy to discuss researches on this subject, and problems on the physiological effects of smoking.

Poloris Company, Inc.

(Booth 17, Lobby)

The Poloris Company's exhibit will feature an interesting display of the medicinal ingredients contained in Poloris Dental Poultice. This display has been designed to acquaint the members of the medical profession with the purpose of Poloris Dental Poultice, namely, local medicinal counter-irritation for the prompt emergency relief of irritation, inflammation or congestion of the teeth and gums. Professional samples will be available.

Powers and Anderson, Inc.

(Booth 25, Lobby)

Powers and Anderson will have on display only the latest equipment available for the modern physician's office. While in Richmond visit the main office—just one block from the John Marshall. Their exhibit will be in charge of Robert E. Anderson, Jr., Charles T. Brown, Jr., H. C. Haun and E. G. Johnson, who will be glad to serve you in any way possible.

Reichel Laboratories

(See Wyeth, Inc.)

Schering Corporation

(Booth 4, Lobby)

Schering Corporation, in line with their policy of bringing out the latest in endocrine research, is featuring the new estrogenic product—Estinyl Tablets. Estinyl, a derivative of the natural hormone alpha-estradiol, is most economical and is orally effective in dosage of .02 and .05 mg. It produces very little nausea and toxic side effects.

Other Schering preparations on display will be Oreton-F Pellets, Oreton, Oreton-M Tablets, Progynon-B, Pranone, Proluton, and Cortate, and the diagnostic products for X-Ray—Neo-Iopax and Priodax.

SMA Corporation

(See Wyeth, Inc.)

Smith, Kline & French Laboratories

(Booth 10, Lobby)

Benzedrine Sulfate Tablets and "Paredrine"-Sulfathiazole Suspension are featured at this exhibit. The potent central nervous stimulation of Benzedrine Sulfate offers, throughout a wide range of application, "A therapeutic rationale which, in its very efficiency, cuts across the old categories." Paredrine-Sulfathiazole Suspension is the only vasoconstrictor-sulfonamide combination which com-

bines *prolonged* bacteriostasis, *non-stimulating* vaso-constriction, and therapeutically *ideal* pH. Not a solution, but an aqueous *suspension* of "Micraform" crystals of free sulfathiazole, it produces no irritation, no stinging and no hyperemia.

Our especially trained professional representatives will be glad to discuss with you the potentialities and possible indications of our products in your own practice.

Frederick Stearns & Company

(Booth 28, Mezzanine)

Doctors are cordially invited to attend our attractive convention booth to view and discuss outstanding contributions to medical science developed in the Scientific Laboratories of Frederick Stearns & Company.

Our professional representatives will be pleased to supply all possible information on the use of such outstanding products as Neo-Synephrine Hydrochloride for intranasal and ophthalmologic use, Neo-Synephrine Sulfathiazolate, Amino Acids (Parenamine) for parenteral and protein feeding, Mucilose for bulk and lubrication, Fergon (Ferrous Gluconate), Gastric Mucin, Susto, Trimax, Appella Apple Powder, Nebulator with Nebulin A, and our complete line of Vitamin products.

E. R. Squibb & Sons

(Booth 16, Lobby)

Physicians attending the Medical Society of Virginia meeting are cordially invited to visit the Squibb Exhibit. Several new items will be shown. Among them is Intocostarin, the standardized Purified Curare Extract now widely used to soften convulsion in shock therapy; a new, highly useful therapeutic multi-vitamin preparation; a sulfathiazole-ephedrine-derivative combination for ophthalmic use.

Tampax, Inc.

(Booth 29, Mezzanine)

Now, more than ever, you should not miss visiting Booth 29, and the opportunity to check into the many advantages offered by this highly approved form of *intravaginal* catamenial protection—so widely preferred because of its many unique features. Special attendants will be glad to demonstrate to physicians and their wives full details as to its functional design, absorptive efficiency, comfort and convenience.

Valentine Meat-Juice Company

(Booth 6, Lobby)

Valentine's Meat-Juice Company was founded in Richmond, Virginia, in 1871 by the late Mann S. Valentine. In 1929, this Company entered into the manufacture of Liver Extracts which is now the major portion of the business. These products are advertised through ethical channels to the medical profession and have been widely distributed throughout the world. The business continues to be carried on by the members of the Valentine family.

Van Pelt and Brown, Inc.

(Booth 20, Lobby)

Van Pelt and Brown, Inc., extend a cordial invitation to all physicians in attendance at the 1944 meeting of the Medical Society of Virginia to visit their booth. Representatives will be on hand at all times during the meeting who will be glad to discuss the V. & B. Brand of prescription specialties which have found such widespread favor with the medical profession.

William R. Warner & Company, Inc.

(Booths 1-2, Lobby)

William R. Warner & Co., Inc., will exhibit its extensive line of specialty pharmaceuticals, including several new preparations of interest to physicians engaged in general and specialized practice.

White Laboratories, Inc.

(Booth 11, Lobby)

At the White Laboratories Booth you will find interesting copies of a series of publications under the general title "Diagnostic Aids to Vitamin Deficiency Conditions". Medical Service Representatives in attendance will be very glad to discuss these with you. The latest clinical reports on results of the use of White's Vitamins A and D ointment in the treatment of burns and various types of ulcers will also be available. This is a product which you will undoubtedly find of great interest.

Wyeth, Inc.

(Booths 13-14-15, Lobby)

At the S.M.A. Corporation exhibit (Booth 13), physicians will be able to obtain the latest information on infant feeding and nutritional biologicals. Of particular interest is the new protected Vitamin A preparation, Caritol.

John Wyeth & Brother Division (Booth 14). You are cordially invited to visit the Wyeth exhibit where Bepron, Amphojel, Phosphajel, Kaomagma, Silver Picrate, B-Plex and other pharmaceutical specialties will be featured.

Reichel Division, Biologicals (Booth 15). Physicians will be interested in the Wyeth Allergenic Diagnostic Equipment exhibited by the Biological Division. Representatives will be present who will be pleased to explain the uses of the Diagnostic and Treatment Sets.

F. E. Young & Company

(Booth 24, Lobby)

Manufacturers of Young's Rectal Dilators. The dilator sets consists of a series of four bakelite dilators, graduated in size and introduced in series as the rectum becomes accustomed to dilatation. Rectal dilatation is used by physicians to treat certain cases of constipation, dysmenorrhea, rectal neurosis, uncomfortable bowel movement, and other conditions which may arise due to a tight or spastic sphincter muscle.

WOMAN'S AUXILIARY to the MEDICAL SOCIETY OF VIRGINIA

President ----- MRS. W. CLYDE WEST, Alexandria
President-Elect ----- MRS. PAUL PEARSON, Aylett
Vice-Presidents:

MRS. LOUIS KOLIPINSKI, Richmond
 MRS. J. L. DECORMIS, Accomac
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 MRS. WRIGHT CLARKSON, Petersburg

Recording Secretary ----- MRS. C. C. SMITH, Norfolk
Corresponding Secretary:

MRS. NATHAN G. SCHUMAN, Alexandria

Treasurer ----- MRS. REUBEN SIMMS, Richmond

Parliamentarian ----- MRS. FLETCHER J. WRIGHT, Petersburg

PROGRAM

Twenty-Second Annual Meeting

Richmond October 23, 24, 25, 1944

Headquarters: Hotel John Marshall

Registration begins Monday at 4:00 P. M.

Every woman attending the Convention is requested to register promptly as a visitor or delegate. (Registration fee—25 cents.)

Convention Committee

MRS. A. G. SHETTER

MRS. E. LATANE FLANAGAN

Monday, October 23rd

7:45 P. M.—Pre-Convention Board Meeting, Hotel John Marshall.

State Officers, Chairmen of Standing Committees, and Presidents of Local Auxiliaries are expected to attend this meeting. Past Presidents, Directors and Presidents-Elect of Local Auxiliaries are invited.

Announcement

Tuesday, October 24th

9:30 A. M.—General Annual Meeting, Hotel John Marshall.

(Open to all women attending the Convention)

MRS. W. CLYDE WEST, Presiding

Invocation—MRS. HAWES CAMPBELL

Address of Welcome—MRS. P. M. CHICHESTER

Response—MRS. ROBT. HIGHTOWER

Roll Call—MRS. C. C. SMITH

In Memoriam—MRS. R. M. REYNOLDS

Minutes Twenty-First Annual Convention

Minutes Post-Convention Board Meeting

Minutes Mid-Winter Board Meeting

Minutes Pre-Convention Board Meeting

President's Message—MRS. W. CLYDE WEST

Reports:

Vice-Presidents—

Mrs. Louis Kolipinski

Mrs. J. L. DeCormis

Mrs. Henry Townsend

Mrs. Wright Clarkson

Corresponding Secretary—Mrs. Nathan G. Schuman

Treasurer—Mrs. Reuben Simms

Parliamentarian—Mrs. Fletcher J. Wright

Committee Chairmen:

Bulletin—Mrs. O. Anderson Engh

Cancer Control—Mrs. Hawes Campbell

Finance—Mrs. Henry Townsend

Historian, Archives and Research—Mrs. H. A. Latane

Hygeia—Mrs. A. G. Horton

Jane Todd Crawford Memorial—Mrs. J. Walker Jackson

Legislation—Mrs. P. M. Chichester.

Leigh-Hodges-Wright Memorial Bed—Mrs. Fletcher J. Wright.

Membership—Mrs. Louis Kolipinski

Organization—Mrs. H. W. Rogers

Press and Publicity—Mrs. E. Latane Flanagan

Program and Health—Mrs. George D. Denton

Public Relations—Mrs. Robt. B. Hightower

Revisions—Mrs. William Lett Harris

Local Auxiliary Presidents—

Accomac-Norhampton Medical Society—Mrs. W. Carey Henderson

Alexandria Medical Society—Mrs. Robt. Hightower

Mid-Tidewater Medical Society—Mrs. Hawes Campbell

Norfolk County Medical Society—Mrs. R. M. Reynolds

Petersburg Unit of Fourth District Medical Society—Mrs. John E. Hammer

Richmond Academy of Medicine—Mrs. A. G. Shetter

Warwick County Medical Society—Mrs. W. A. Mitchell

Williamsburg-James City County Medical Society—Mrs. T. B. Henderson

Loudoun-Fauquier Medical Society—Mrs. Stuart McBryde

Delegate to Woman's Auxiliary to Southern Medical Association—Mrs. E. Latane Flanagan

Presentation of Membership Trophy—MRS. FLETCHER J. WRIGHT

Acceptance

New Business:

Recommendations from the Board

Report of Committee on Credentials and Registrations

Report of Nominating Committee—MRS. H. W. ROGERS, Chairman

Election of Officers

Guest Speaker—DR. C. B. BOWYER, President, Medical Society of Virginia

Introduction by DR. H. A. LATANE

Introductions—

1. MRS. DAVID W. THOMAS, President, Woman's Auxiliary to American Medical Association
2. MRS. JOHN P. HELMICK, President, Woman's Auxiliary to the Southern Medical Association
3. DR. H. B. MULHOLLAND, President-Elect, Medical Society of Virginia
4. Advisory Committee:
DR. H. A. LATANE
DR. D. C. WILSON
DR. O. O. ASHWORTH

Resolutions—MRS. HENRY TOWNSEND

Installation of Officers and Presentation of Gavel—MRS. HAWES CAMPBELL

President's Address—MRS. PAUL PEARSON
Adjournment

1:00 P. M.—Luncheon (subscription)—Hotel John Marshall

Chairman—MRS. R. F. SIMMS

Guest Speakers

MRS. DAVID W. THOMAS

MRS. JOHN P. HELMICK

MRS. COLGATE W. DARDEN

4:00 P. M.—Post-Convention Board Meeting, Hotel John Marshall

MRS. PAUL PEARSON, Presiding
Adjournment

BOOK ANNOUNCEMENTS

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us same.

Textbook of Gynecology. By EMIL NOVAK, M.D., F.A.C.S., Associate in Gynecology, The Johns Hopkins Medical School; Gynecologist, Bon Secours

and St. Agnes Hospitals, Baltimore. Second Edition. Baltimore, The Williams and Wilkins Co., 1944. xi-708 pages. Illustrated. Cloth. Price \$8.00.

Poliomyelitis. The Relation of Neurotropic Streptococci to Epidemic and Experimental Poliomyelitis and Poliomyelitis Virus, Diagnostic Serologic Tests and Serum Treatment. By EDWARD C. ROSENOW, M.D., Professor of Experimental Bacteriology, University of Minnesota, Mayo Foundation, Rochester, Minnesota. Vol. A44 of *The International Bulletin*, 319 West 103rd Street, New York. 87 pages. Price \$2.75.

Sulfonamide Therapy in Medical Practice. By FREDERICK C. SMITH, M.D., M.Sc., (Med.), F.A.P.S., Editor of *Philadelphia Medicine*, official organ of the Philadelphia County Medical Society; editor of *The Medical World*; etc. Foreword by GEORGE MORRIS PERSOL, B.S., M.D., Professor of Medicine, Graduate School of Medicine, University of Pennsylvania; etc. Philadelphia, F. A. Davis Company. 1944. xiii-368 pages. Illustrated with numerous engravings, graphs and tables. Cloth. Price \$5.00.

This book is divided into two parts. Part I consists of about 90 pages concerning general information on the sulfonamides. Here is discussed very briefly the pharmacology of the group, the dosage, methods of administration, toxic reactions and tests for the sulfonamides.

Part II bears on the clinical indications of the sulfonamides. This takes up about 250 pages and is very well done. This book should be very useful, especially to those in general practice.

H. B. H.

Clinical Lectures on the Gallbladder and Bile Ducts. By SAMUEL WEISS, M.D., F.A.C.P., Clinical Professor of Gastroenterology, N. Y. Polyclinic Medical School and Hospital; Gastroenterologist, Jewish Memorial Hospital, New York. The Year Book Publishers, Inc., Chicago. 1944. 504 pages. Cloth. Price \$5.50.

The reviewer has been intrigued by this book for the reason the writer has attempted to give a comprehensive survey of all aspects of diseases of the gall-bladder and bile ducts. The first chapters which deal with the anatomy and physiology of these structures add greatly to the usefulness of the volume.

One gets the impression the writer has erred by utilizing the conclusions of others rather than stating specifically the conclusions incident to his own personal experience. Basically, I feel the volume is useful for the practitioner of medicine who wishes to have at hand a reference text on the diseases of the gall-bladder and bile ducts.

W. B. PORTER.

VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

(Founded by Landon B. Edwards, M. D., April, 1874)

WYNDHAM B. BLANTON, M. D.,

Editor Emeritus

M. PIERCE RUCKER, M. D.,

Editor

AGNES V. EDWARDS

Business Manager

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WYNDHAM B. BLANTON, M. D., Richmond.

All correspondence regarding editorial matter, original articles, and policy should be directed to the Editor. Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 1200 East Clay Street, Richmond 19, Virginia. The MONTHLY is not responsible for the opinions and statements of its contributors. All advertisements are accepted subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association. Annual Subscription, \$2.00. Single copies 25c.

VOL. 71

SEPTEMBER, 1944

No. 9

The Deferment of Medical and Premedical Students

FEW will deny that the system for training doctors in this country during the years just preceding 1942 was equal or superior to that practiced in any country at any time. With the coming of the war, necessitating, as it did, attenuated teaching staffs, accelerated programs, and increased responsibilities for civilian care, that system had to be modified to some extent. However, up to the beginning of the present year, both the requirements of the Armed Forces and civilian needs were reasonably well met. Moreover, there was reason to believe not only that these demands would continue to be fulfilled for the duration but also that an adequate supply of physicians would be forthcoming for the years following the war. This achievement and this prospect depended largely upon the co-operation of the Armed Forces whereby 55 per cent of entering medical students would come from the Army Specialized Training Program, 25 per cent from the Navy V-12 Program, and 20 per cent from civilian sources.

In the past six months things have happened to this program that may prove catastrophic. In February the Army cut its Specialized Training Program and has since revised its agreements with Medical Schools to the extent that in 1945 only 28 per cent of the entering class instead of 55 per cent will be provided. The Navy may increase its quota somewhat; but even then it will be necessary for at least 40 per cent of medical students to come from civilian sources, which will mean 4-F's and women.

In April the Selective Service System abolished all further occupational deferments of premedical and medical students not enrolled in Medical Schools as of July 1, 1944. This will doubtless mean, even if the Navy continues its present program, that the entering classes of 1946 will be composed of women and physically disqualified men to the extent of 69 per cent. It is estimated that nowhere near this number is available if entrance requirements are still to be maintained.

When it is realized that the present annual output of 7,000 medical graduates may easily be reduced to 2,500 within the next few years, the situation becomes alarming. In this country 3,000 to 3,500 physicians die each year in normal times, and war casualties are unpredictable. Furthermore, the requirements of the Armed Forces, the Veterans Administration, and the liberated countries of Europe and elsewhere may well increase future demands for medical personnel. Certainly, there is small reason

to expect a greatly diminished demand.

The possibly disastrous effects of these policies upon medical care of the future were brought to the attention of the Head of the Selective Service System, the Secretaries of War and of the Navy, and the President. These authorities steadfastly refuse to alter their previous rulings. They hold that further deferment of premedical students would be an evasion of the Selective Service Law and that after all the need for future medical care is subordinate to the need of the fighting forces for young men.

Major General Hershey, in a letter dated July 24, 1944, and published in the *Journal of the American Medical Association*, says that there is "undue concern over the future supply of doctors". He states that for future vacancies in Medical schools "there is available a large number of men between 18 and 26 years of age found physically disqualified for any military service or physically qualified for limited military service only, women, soldiers discharged from the Army, and men over 30 years of age". All that is necessary, according to General Hershey, is for the schools to "find in this group the men they want and to offer them the inducement necessary to get them to study the professions".

The Council on Medical Education and Hospitals of the American Medical Association is in sharp disagreement with the above proposal. It is pointed out that in the groups mentioned, few are qualified to study medicine and that poor material cannot be converted into good material by any process as simple as offering the "necessary inducements". In short, in order to utilize these groups, standards would have to be drastically lowered.

At the Meeting of the House of Delegates of the American Medical Association in June, 1944, this subject was thoroughly discussed, and a resolution was adopted condemning current regulations and appealing for their correction. This resolution was sent to the President, the Secretaries of War and of the Navy, and to all members of the House and Senate Military Committees. No results have so far appeared.

In an effort to relieve the situation, a bill was introduced June 23, 1944, by Congressman A. L. Miller of Nebraska, to amend the Selective Service Act to provide for the deferment in each calendar year of not less than 6,000 medical students. This bill, H.R. 5128, is now pending in the House Committee on Military Affairs, of which Congressman A. J. May of Kentucky is Chairman. Congress can make such a law and may do so.

Believing that a steady flow of properly selected and well trained physicians is essential to the medical care of the people of the United States, the Council on Medical Education and Hospitals urges the passage of H.R. 5128. State Societies and their component County Societies have been asked to take such action as is possible to contact their respective representatives in Congress, informing them of the issues involved and requesting their support of this bill.

J. MORRISON HUTCHESON, M.D.

The Oldest Southern Medical Journal

WITH the May issue, the *New Orleans Medical and Surgical Journal* celebrated its hundredth birthday. Dr. Matas in the leading article gives a delightful account of the *Journal* since his first connection with it, when in 1882 the *Journal* published his first original communication. He also contributed biographic annotations to the pictorial gallery of the editors. The collection is complete except for the portrait of one of the founders, Abner Hester, 1813-1853, who, by the way, was born in Mecklenburg County, Virginia. A. E. Fossier has an article on the early history of the *New Orleans Medical and Surgical Journal*, and William Dosite Postell one on the medical literature in Louisiana prior to the advent of the *Journal*. Mr. Postell also

has an interesting article on the medical progress of Louisiana from 1718 to 1860. Mary Louise Marshall, that dean of medical librarians, contributed bibliographic notes on the *Journal*. Not the least interesting are the comments of Daniel Drake on medicine in New Orleans. Drake visited the city in 1844 and Dr. Musser has edited the notes which he made at the time. The periodical is a comparatively new form of medical literature. In the leading editorial, comment is made on the *London Lancet's* claim to being the oldest medical journal published in English, which claim was made some 20 years ago when that magazine celebrated its centennial. The *New Orleans Medical and Surgical Journal* is antedated by the *New England Medical and Surgical Journal* (1812) the *American Journal of the Medical Sciences* (1820) and the *Lancet* (1823). A number of medical journals were started in the South before 1844, notably Daniel Drake's journals, the *Western Journal of Medicine and Physical Sciences*, Cincinnati, 1827, the *Western Journal of Medicine and Surgery*, Louisville, 1840, John Esten Cooke's journal, *The Transylvania Journal of Medicine and Associated Sciences*, Lexington, 1828, and Joseph A. Eve's *The Southern Medical and Surgical Journal*, Augusta, Ga., 1836, but none has survived.

The *New Orleans Medical and Surgical Journal* has had an honored but checkered career. It was started in a critical time in New Orleans' interesting history. On account of the Louisiana Purchase, Jackson's great victory over the British, and the advent of steamboats on the Mississippi, the essentially foreign city of New Orleans with its Latin population and old world culture suffered a Yankee invasion. The result was a strange mixture of wealth and refinement with frontier vigor. The medical profession shared the resulting confusion and jealousies. There were French speaking doctors with European education and English speaking doctors with American education. The older established physicians had their society in which French was spoken and the newcomers theirs in which English was spoken. The establishment in 1834 of the Medical College of Louisiana (afterwards Tulane) by the newcomers added to the discord. Prior to 1844 Louisiana is represented in medical literature by approximately 17 pamphlets and reports, 31 journal articles, and one short lived medical journal which was published in French. Such was the background for the birth of the *New Orleans Medical Journal* in May, 1844. It was started by Drs. Erasmus D. Fenner and A. Hester as a private venture, because both newcomers were in desperate circumstances. The time was ripe and the venture succeeded. Within a year the faculty of the medical school which had spurned the project at first, gained control of it. The *Journal* began its career by attacking quackery and low standards of medical practice, and, in spite of civil war and the darker days of reconstruction, flood and pestilence, has continued in its efforts to improve medical standards. Twice it was forced to suspend operations; first, in 1862-1865 and second, in 1870-1873. After the Civil War it was revived by Dr. S. E. Chaille. Its second revival in the reconstruction days was due to the heroic efforts of Dr. S. M. Bemiss.

In the past 100 years the *New Orleans Medical and Surgical Journal* has been owned, controlled or directed by the University of Louisiana Medical Department (38 years), New Orleans Medical and Surgical Association (2 years), New Orleans Medical Publishing Company (7 years), Dr. McShane (5 years), Drs. Chassaignac and Dyer (26 years), and for the past 22 years by the Louisiana State Medical Society. During this time the *Journal* has reflected the history of the medical profession of Louisiana and the South and the May, 1944, number is an important chapter in that history. The Louisiana State Medical Society is to be congratulated on its *Journal* and upon the grand old man of American surgery who contributed the leading article of its centennial number.

Societies

Medical Society of Northern Virginia.

The August meeting of this Society was held in Woodstock, on the 8th, with the president, Dr. Charles O. Dearmont of White Post, presiding. Due to the death of Dr. J. E. Harris, who had served the society as secretary-treasurer for many years, this office had to be filled and Dr. Herman I. Pifer of Winchester was named to it. In addition to a short business session, the following papers were presented: Thrombotic Conditions of the Lower Extremities and Their Complications, by Dr. Paul Hill of Woodstock; the Murray-Wagner-Dingell Bill, by Dr. Henry Clay Smith of Boyce; and Treatment of Congestive Heart Failure, by Dr. Douglas G. Chapman (*invited guest*) of Richmond. Following adjournment, luncheon was served.

Clinics in Southampton County.

The summer clinics sponsored by the Fourth District Medical Association and the Southampton County Medical Society are proving quite interesting and are well attended. The first for this year was on July 26 (program given in the August MONTHLY).

Program for the second Clinic on August 30 was by the staff of Raiford Memorial Hospital and included:

Otolaryngology in Pediatrics—Dr. Morgan B. Raiford.

Chest Complications in Children—Dr. Joseph D. Hough.

Fractures in Pediatrics—Dr. Kurt Hirsch.

Feeding Problems—Dr. Isa C. Grant.

The September Clinic will be on the 29th and will deal with Endocrine Problems.

The Virginia Peninsula Academy of Medicine,

Whose membership includes doctors in the peninsula between the James and York Rivers, will resume meetings in September, after a recess for July and August. Meetings are held on third Mondays, with dinner at 6:30, followed by a scientific program. Dr. M. Lawrence White of the University of Virginia will be guest speaker at the meeting on September 18, his topic being Thoracic Surgery.

Officers of the Academy are: President, Dr. Frank A. Kearney of Phoebus; vice-president, Dr. M. B. Beecroft of Newport News; and secretary-treasurer, Dr. Robert H. Wright, Jr., of Phoebus.

The Mid-Tidewater Medical Society

Held its regular quarterly meeting at Urbanna on July 25, with a good attendance. The program was given by representatives of the Medical College of Virginia, Dr. W. T. Sanger, president, and Dr. J. P. Gray, dean of the Medical School, speaking on the Medical College of Virginia Hospital. Dr. Everett I. Evans presented a paper on "The Treatment of Burns", and Dr. Harry Walker one on "Penicillin". The latter paper was discussed by Dr. J. Morrison Hutcheson.

At a short business session, it was voted to hold the next meeting at Millers Tavern on October 31, and delegates were named to the Richmond meeting of the State Society.

The Bedford County Medical Society

Held a meeting on August 8 and at this time Dr. C. R. Titus, formerly of Bassett but now of Bedford, was admitted to membership. Dr. J. G. Jantz was elected president and Dr. T. P. West secretary. The former secretary, Dr. W. V. Rucker, has for sometime been in service overseas. Delegate and alternate were also named for the Richmond meeting.

Warwick County Medical Society.

Officers of this Society who were elected to serve for the current year are: President, Dr. Thos. N. Hunnicutt; vice-president, Dr. E. D. Blechman; and secretary, Dr. Murray Dick, all of Newport News. After a recess for the summer months, meetings will be resumed in September, the next one to be on the 12th at the James River Club.

Elizabeth City County Medical Society.

Present officers of this Society are: President, Dr. Frank A. Kearney, and secretary, Dr. Robert H. Wright, Jr., both of Phoebus. Dr. Joseph Lee Mann, former secretary, has been in the service for sometime.

News

Medical Society of Virginia.

Program for the State meeting, October 23-25, appears in this issue of the MONTHLY. Our guest speakers are Honorable Colgate W. Darden, Governor of Virginia, Dr. Alexis F. Hartmann, professor of Pediatrics at Washington University, St. Louis, and Dr. Wallace E. Herrell, graduate of the University of Virginia and now Consultant in Medicine at the Mayo Clinic, Rochester, Minn., and assistant professor in Medicine, Mayo Foundation Graduate School, University of Minnesota.

While the program does not include as many papers as usual, one afternoon has been set aside for clinics sponsored by the Medical College of Virginia. Many special societies will also get together during this meeting so the occasion should prove an unusually interesting one.

The John Marshall—hotel headquarters—has been booking reservations for sometime but there are other good hotels in short walking distance, so that all who can attend may be comfortably accommodated.

Mark the dates on your calendar at once and plan to attend as many sessions as possible.

The Poliomyelitis Epidemic.

In the first 31 weeks of 1944, the United States has had more cases of infantile paralysis reported than at any comparable time shown on the records in 28 years, according to The National Foundation for Infantile Paralysis.

Latest figures from the U. S. Public Health Service, showing state reports through August 5, reveal a total of 3,992 cases, the National Foundation said. This is 1,226 cases more than reported for the same period last year when the nation suffered its third worst polio epidemic, and 1,089 cases more than in 1931 when the second worst outbreak was recorded. The records of the worst outbreak in 1916 show there were 6,767 cases by August 1 of that year.

In five states where the outbreaks are in epidemic or near-epidemic proportions, the total cases reported through August 5, 1944, are higher than those states reported for the entire year of 1943. They are:

State	Through August 5, 1944	Entire year of 1943
New York -----	902	692
North Carolina -----	470	37
Kentucky -----	377	157
Pennsylvania -----	284	143
Virginia -----	205	61

The serious or threatening outbreaks this summer are confined almost entirely to states east of the Mississippi, while last year's were largely west of the river.

Basil O'Connor, president, reported that the National Foundation has sent epidemic aid, either in emergency funds, professional personnel or supplies and equipment, into 13 affected states. In addition to the five named above, they are: Ohio, Tennessee, Michigan, Mississippi, Indiana, Washington, Oregon and California. Outbreaks in the latter three states earlier this year have now waned.

Funds through which the National Foundation and its Chapters carry on their work are supplied by the March of Dimes and similar activities held each January in the Celebration of the President's Birthday.

McGuire General Hospital, Richmond.

Arrival of hundreds of wounded men from European battlefronts has spotlighted attention of many Virginians on McGuire General Hospital, and in response to numerous requests Colonel P. E. Duggins, commanding officer, has issued a summary of information about the institution.

The hospital, located at Broad Rock Road and Belt Boulevard was named for Dr. Hunter Holmes McGuire, surgeon to General Stonewall Jackson's Brigade and later medical director to the Army of Northern Virginia. The land was broken in August, 1943, and the site covers 142 acres with 70 brick buildings of from one to three stories.

McGuire General is one of the first of the army's general hospitals to include within its setup five buildings designed by the Veterans' Administration.

It is a 1,784-bed hospital designated as an evacuation center for Hampton Roads Port of Debarka-

tion, Newport News. Patients usually are kept only from three to seven days, and may choose the hospital to which they wish to be sent, providing the institution selected has facilities for caring for them.

Two hundred beds are reserved for overseas casualties from Richmond and surrounding areas, these patients to remain at the hospital until cured or discharged.

The hospital is a city within itself, with its own civilian police and fire departments, power plant, laundry, gymnasium, motion picture theater, recreation auditorium, barber shop and beauty parlor, and a post exchange, including a 38-foot soda bar.

McGuire General is equipped with the finest therapeutic devices yet conceived by medical science, Colonel Duggins states, and is prepared to handle any kind of battle casualty.

Personnel Changes in State Department of Health.

Dr. H. M. Kelso, Assistant Director of Local Health Services with headquarters at Abingdon, Virginia, has resigned effective September 1, 1944, to accept a position with the City Health Department of Knoxville, Tennessee.

Dr. P. M. Chichester, Assistant Director of Local Health Services, with headquarters in Richmond, has been temporarily assigned to the post vacated by Dr. H. M. Kelso. Dr. Chichester will direct the activities in the Southwest Health District.

169th Anniversary.

On July 27, the Army Medical Department observed the 169th anniversary of the establishment of the first medical service for the American Army. The Medical Department had its inception in the creation by the Continental Congress, July 27, 1775, of a hospital for the American Forces shortly after George Washington assumed command in the Revolutionary War.

Dr. J. M. Biedler,

Of Harrisonburg, has opened an office in Fort Lauderdale, Florida, for the practice of medicine and surgery. His present plan is to practice there in the winter and to return to Harrisonburg for the summer.

Dr. Lucy S. Hill,

Of the class of '24, Medical College of Virginia, who has been practicing in New Orleans, has re-

turned to Virginia and located in her home county of Madison.

Promotions in the Service.

The following promotions have recently been noted for our members in Service:

To LIEUTENANT COLONEL:

Dr. Guy W. Horsley, Richmond.

To CAPTAIN:

Dr. Herbert B. Hutt, Alexandria.

Dr. Wyatt E. Roye, Covington.

Dr. William V. Rucker, Bedford.

Dr. Guy W. Daugherty,

Rochester, Minn., has been made a diplomate by the American Board of Internal Medicine. Dr. Daugherty, formerly of Fayetteville, W. Va., was a member of the class of '37, Medical College of Virginia.

Promotion for Dr. Lasersohn.

Dr. Martin Lasersohn, who was located in Richmond for several years and connected with the Medical College of Virginia staff from 1924 to 1930, has just been appointed assistant to the president and elected assistant treasurer of the Winthrop Chemical Company, Inc., of New York City. Dr. Lasersohn has been connected with this company as medical director since 1930, at which time he left Virginia. He has continued his membership in the Medical Society of Virginia in spite of his residence in New York.

"War-Population-Disease"

Is an exhibit consisting of six charts in color and presenting interesting First and Second World War statistics on: Population, Marriage, Birth rates, Tuberculosis, and Diabetes.

This exhibit was originally presented at the New York State Medical Society meeting in Buffalo, New York, in 1943, has since been shown at other meetings, and is now available for use by medical, public health, nursing and other interested groups.

The charts comprising this material each measure 14 inches by 22 inches and can be shipped parcel post. The exhibit is available without cost and is easily set up. Groups wishing to use it should send their requests well in advance of the date de-

sired to the Welfare Division, Metropolitan Life Insurance Company, 1 Madison Avenue, New York 10, N. Y., stating the place and date of your meeting and the name of the person in whose care it should be sent.

American Board of Obstetrics and Gynecology.

The next written examination of this Board will be held February 3, 1945. Prospective applicants or candidates in military service are urged to obtain applications and Bulletin of detailed information regarding the Board requirements from the Secretary's Office, 1015 Highland Building, Pittsburgh 6, Pennsylvania. Applications must be in the Office of the Secretary, Dr. Paul Titus, by November 15, 1944, ninety days in advance of the examination date. The time and place of the Spring 1945 (Part II) examination will be announced later.

Medical College of Virginia News.

Commencement exercises closing the current session will be held at The Mosque, Saturday, September 23, at eight o'clock. Honorable J. Melville Broughton, Governor of North Carolina, will be the speaker. Dr. John Shelton Horsley of Richmond will be the recipient of the honorary degree of Doctor of Science at these exercises. The graduating class will number one hundred seventy-two.

Dr. Robert W. Ramsey of the University of Rochester faculty will join the staff of the college on September 1 as associate professor of physiology, replacing Dr. Ernst Fischer, who is being transferred to the department of physical medicine with the rank of professor.

Dr. Frances A. Hellebrandt of the University of Wisconsin will join the college staff on October 1 as professor of physical medicine in the department to be set up under the recent Baruch grant.

Dr. W. T. Sanger, Dr. J. P. Gray, Mr. Wortley F. Rudd, Dr. T. D. Rose, Dr. S. S. Arnim, and Dr. S. S. Negus attended the workshop at Virginia Polytechnic Institute, August 23-30, as sponsored by the State Board of Education.

News from the Department of Medicine, University of Virginia.

Dr. Wendell M. Stanley, of the Rockefeller In-

stitute for Medical Research, Princeton, New Jersey, delivered the annual Phi Beta Pi Medical Fraternity Lecture on July 24. He spoke on the subject "Viruses and Their Relation to the Tumor Problem".

Lt. Col. Daniel C. Elkin, Surgeon-in-Chief at the Ashford General Hospital in West Virginia, gave the annual address at the time of the initiation exercises of Alpha Omega Alpha on the night of August 11. He spoke on the subject of "Arteriovenous Aneurysm, Review of Cases Resulting from War Wounds".

Dr. Herbert Silvette, Assistant Professor of Pharmacology, Materia Medica, and Toxicology, has received a third grant of \$250 from the American Medical Association for continuation of investigations on The Effect of Low Barometric Pressure on Kidneys previously damaged, either surgically or by drugs.

The Physician's Importance in War and Peace.

To memorialize the medical profession's "skill and courage and devotion beyond the call of duty" is the purpose of the new prize-contest recently announced by the American Physicians Art Association.

The contest is open to all physicians, both civilian and military, who are members of the A.P.A.A. The prizes are sufficiently important to attract some very fine art in all of the principal media, including oil, water color, sculpture, and photography.

For full details, write to the Association's Secretary, Dr. F. H. Redewill, Flood Bldg., San Francisco, Cal. Also pass this information on to your physician-artist friends, both civilian and military.

Dr. G. C. Godwin,

Recently in charge of the City Tuberculosis Sanatorium of Roanoke, has moved to Front Royal where he is plant physician to the Viscose Corporation located there.

Dr. Euclid F. Neal,

Who has practiced at Altavista for sometime, has moved to Danville where he has offices in the Masonic Temple.

Changes in Richmond Health Department.

Dr. Millard C. Hanson, who recently resigned as city health director of Richmond, has accepted the appointment as medical director for the American Red Cross, in charge of the Pacific area, with headquarters in San Francisco. In his new position, Dr. Hanson will have charge of medical activities of the Red Cross in seven Western states and the territory of Alaska.

Dr. John B. Porterfield, recently director of the Bureau of Industrial Hygiene of the State Department of Health, has been named by the new Mayor to succeed Dr. Hanson. Dr. Porterfield graduated from the University of Virginia Department of Medicine in 1933 and holds the degree of Master of Public Health from Johns Hopkins School of Public Health and Hygiene. He has been engaged in health work for most of his professional life.

Dr. Paul Bowden, city epidemiologist since March 1, 1942, has also tendered his resignation, effective October 1, to accept a position as health officer in an Ohio City.

Raiford Memorial Hospital.

It is now expected that the addition to the Raiford Memorial Hospital at Franklin, which will make it up-to-date in every respect, will be completed and opened about December 15.

Married.

Dr. Robert Payne Beckwith, Jr., of Roanoke Rapids, N. C. and Lt. Nancy Margaret Kimbrough, Army Nurse Corps, of Romney, W. Va., on August 8. Both are graduates in their work from the Medical College of Virginia and he is now completing his internship in the College hospitals.

New Upjohn Display Features Pharmacy in the War.

Pharmacists are performing herculean tasks in the armed services of our country and in civilian business. To pay tribute to these men, The Upjohn Company is featuring "Pharmacy in the War" in their new institutional window display.

The large center piece of the display carries a number of official Army and Navy photographs showing pharmacists on duty in various parts of the world, including such areas as Italy, Australia,

and Bougainville. Prominence is given to the statement: "From foxholes to base hospitals . . . from jungles to Arctic wastes . . . pharmacists are serving the armed forces." One of the cards bears this startling assertion: "Average consumption of pharmaceuticals of men overseas is two pounds per man per month".

Pharmacists are serving in every branch of our armed forces. They are contributing much to the war effort on the home front by carrying on under discouraging handicaps of manpower shortages, and are helping the physicians carry their heavy loads under wartime conditions.

New Books.

The following are recent additions to the Library of the Medical College of Virginia and are available to our readers, under usual library rules:

Baruch, Simon—An epitome of hydrotherapy, for physicians, architects and nurses. 1920.

Bassler, Anthony—Diseases of the digestive system. 1920.

Bell, E. T. ed.—A textbook of pathology.

Bittinger, B. F.—Historic sketch of the monument erected in Washington City under the auspices of the American Institute of Homoeopathy to the honor of Samuel Hahnemann. 1900.

Chafee, John S.—A century of Butter Hospital 1844-1944.

De Sanctis, Adolph G. ed—Advances in pediatrics. 1942.

Dodson, A. I.—Urological surgery. 1944.

Frampton, M. F. & Rowell, H. G. ed.—Education of the handicapped. Vol. II. Problems.

Gamow, George—Mr. Tompkins explores the atom. 1944.

Gates, R. Ruggles—Medical genetics and eugenics. 1943.

Georgia Program for the Improvement of Instruction in the Public Schools—Natural resources of Georgia. 1938.

Gesell, Arnold—Atlas of infant behavior. 1934.

Gordon, Benj. Lee—Romance of medicine. 1944.

Harrow, Benjamin—Textbook of biochemistry. 1943.

Horton, W. M.—Wooden toy-making. 1943.

Kolmer, John A.—Clinical diagnosis by laboratory examinations. 1943.

Kovacs, R.—A manual of physical therapy.

Moll, A. A.—Aesculapius in Latin America. 1944.

1939 Year Book of Neurology, Psychiatry and Endocrinology.

Newsome, A. R. & Lefler, H. T.—Growth of North Carolina. 1942.

Noel, H. S. ed.—The modern apothecary. A compendium in four parts. 1941.

- Oberling, Charles—The riddle of cancer. 1944.
- Ohio Development and Publicity Commission—Ohio, an empire within an empire. 1944.
- Petty, Julian J.—The growth and distribution of population in South Carolina. Bull. No. 11. 1943.
- Robson, John B.—Louisiana's natural resources, their use and conservation. 1944.
- Rowe, Nellie M.—Discovering North Carolina. 1940.
- Simmons and Gentzkow—Laboratory methods of the United States Army.
- Smith, F. C.—Sulfonamide therapy in medical practice. 1944.
- Strain, F. B.—New patterns in sex teaching. 1934.
- Strang, R. M.—Role of teacher in personnel work. 1935.
- Sugrue, Thomas—There is a river, the story of Edgar Cayce. 1942.
- Thompson, W. S.—Plenty of people. 1944.
- Warren, Jule B.—North Carolina, yesterday and today. 1941.
- Weiss, Samuel—Clinical lectures on the gallbladder and bile ducts. 1944.
- Wernimont, Kenneth—Agricultural drainage administration in South Carolina, a proposed post-war drainage program. 1943.
- Who's who in America. 1944-1945.
- Williams, Roger H.—A textbook of biochemistry. 1942.

Specially Trained Psychiatrists.

The importance of specially trained psychiatrists has been emphasized by the recent graduation of 140 medical officers from three schools of military neuropsychiatry in the New York area. Classes were conducted at the Mason General Hospital on Long Island, the Columbia University College of Physicians and Surgeons, and Bellevue Hospital Medical College under the direction of leading civil and military psychiatrists and neurologists.

The courses at Columbia and Bellevue have been discontinued until Fall. However, the course at Mason General Hospital is being conducted with a new class of fifty-four officers which entered on July 8.

Officers graduating from these schools have been ordered to duty in Army general hospitals to aid in

the care and treatment of psychiatric cases. Most of the officers recently completed nine-month internships followed by special courses at the Army Medical Field Service School, Carlisle Barracks, Pennsylvania, and in general hospitals throughout the country. They then entered the schools of military neuropsychiatry for three months' intensive study in basic psychiatry and neurology. Their training will continue under the Chief of Neuropsychiatry at the hospital to which the students are assigned.

Wanted—

A Nurse who has some experience in anesthesiology; private hospital. Address "Nurse", care VIRGINIA MEDICAL MONTHLY, 1200 East Clay Street, Richmond 19. (Adv.)

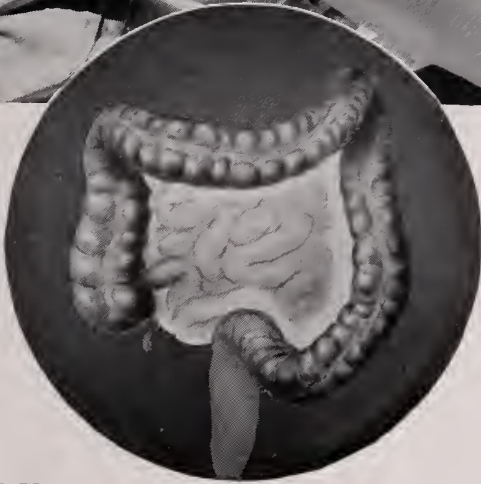
Obituaries

Dr. Fred Thomas Hauser,

Well Known physician of Loudoun County, died at his home at Purcellville, July 25, after an illness of more than a year. He was forty-one years of age and a graduate of the Medical College of Virginia in the class of 1933. Before locating in Purcellville about eight years ago, Dr. Hauser had practiced in Bland County and was also, for a short time at Fort Monroe. He was a member of the staff of Winchester Memorial Hospital, a member of the Medical Society of Northern Virginia, the Loudoun County and the State Medical Societies. His wife and two young sons survive him.

Captain Elmer Norval Carter, MC., AUS.,

Huntington, W. Va., an alumnus of the Medical College of Virginia, was killed in action in Normandy, June 19th. He was thirty-two years of age and had graduated in medicine in 1937. His wife and two sons survive him.



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You know only too well that a number of useful, necessary medications may induce constipation as an unfortunate by-product. The normal cycle of bowel evacuations is thrown off schedule.

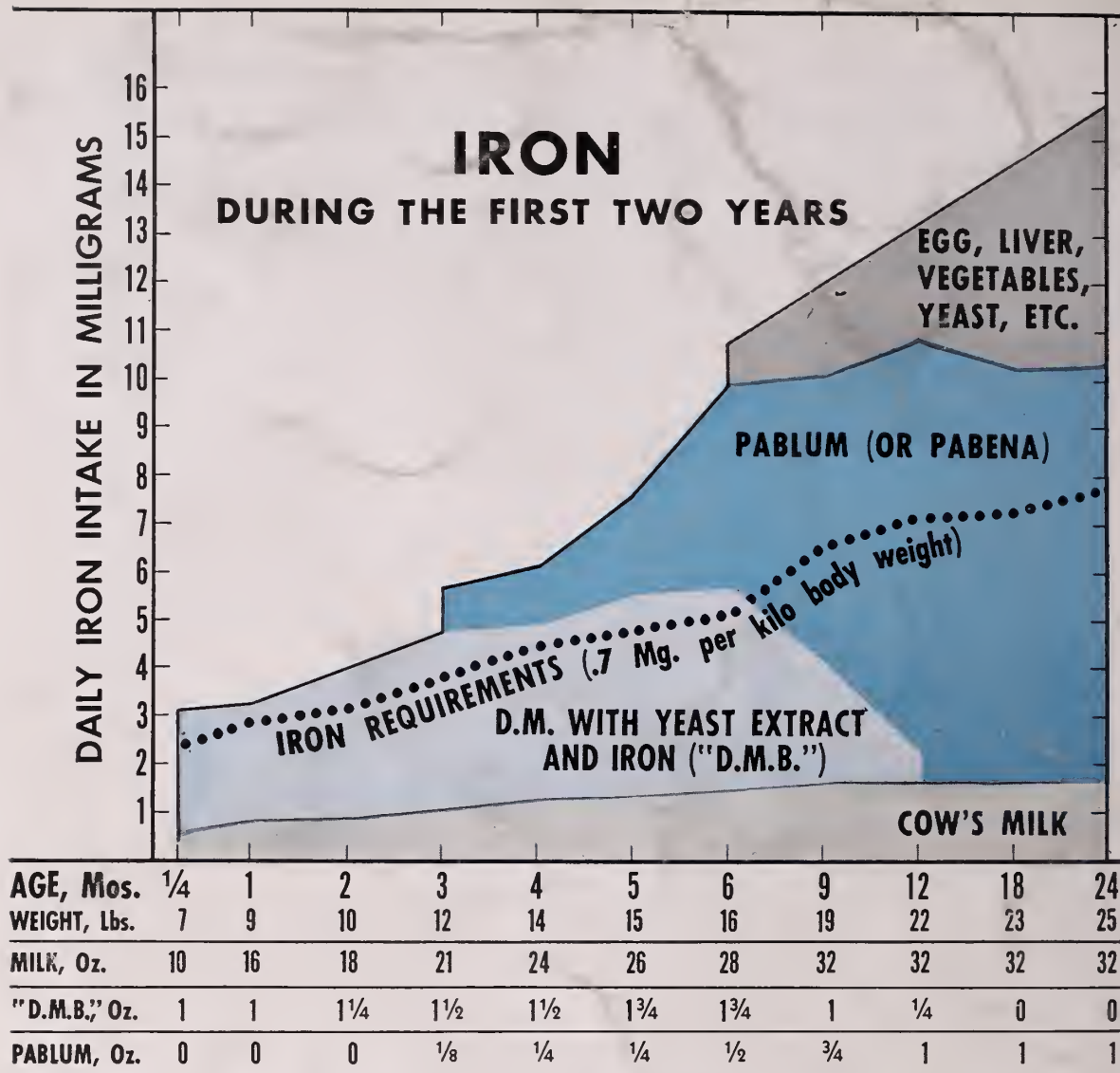
Petrogalar gently, persistently, *safely* helps to establish "habit time" for bowel movement. It is evenly disseminated throughout the bowel, effectively penetrating and softening hard, dry feces, resulting in comfortable elimination with no straining . . . no discomfort. Petrogalar to be used only as directed.

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FOR SAFE RETURN TO "HABIT TIME"



IRON DURING THE FIRST TWO YEARS

During fetal life iron accumulates (in the form of hemoglobin) in the infant's body. After birth the hemoglobin frequently drops to 50% by the third month, especially in prematures. Neither breast milk nor cow's milk is capable of offsetting this loss, as they are deficient in iron. This chart shows that when the carbohydrate and cereal supplements contain iron, a sizeable margin of safety over the requirements can be maintained, not only during the important first six months, but throughout the first two years of life.

More iron than the calculated requirement is needed because some iron is not utilized. In rapidly growing, or poorly nourished infants, and in the presence of infection, the need for iron may be even greater than is indicated in this chart for normal infants.

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Virginia

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OF MEDICINE

OCT 11 1944

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MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

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Medical Society of Virginia
Annual Session — Richmond
October 23, 24, 25, 1944

October 1944



"MY DOCTOR'S MADE A NEW MAN OUTTA BOTH OF US!"

"ALL that endless figuring and re-figuring of milk, carbohydrates, water for feeding formulas was getting my doctor down. Specially with all he has to do these days.

"No wonder he looked into S-M-A. An' no wonder he made all his babies S-M-A babies—right off! It sure fixed him up with extra time for his extra work—and even a bit for some sleep. Why, it takes only two minutes to explain to a mother or nurse how to mix and feed S-M-A*.

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S-M-A is derived from tuberculin-tested cows' milk, the fat of which is replaced by animal and vegetable fats, including biologically tested cod liver oil, with milk sugar and potassium chloride added, altogether forming an antirachitic food. When diluted according to directions, S-M-A is essentially similar to human milk in percentages of protein, fat, carbohydrate, ash, in chemical constants of fat and physical properties.



"Everybody's
Happy

... IF IT'S AN **SMA** BABY!"



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Guest Editorial

The Importance of Clinical Instruction of Nurses

THERE has not been an era in the history of our country when the professional nurse was in greater demand than this hour of world-wide death and destruction of human beings. Indeed, this very era has taught us the very great service the profession has obtained from the practical nurse who has had no didactic instruction.

It takes a good deal of courage to say anything against any type of thought that might be considered educational, but remember there is great disparity between education and wisdom.

One of the greatest surgical teachers of America told the late Joseph Price he had educated all the common sense out of his son and that his son did not have a practical thought and therefore was worthless to the medical profession. If this is so of a member of the medical profession, it is true with a vengeance in the work of the professional nurse. I know of no calling or profession where the practical so overshadows theory or finesse as that seen in the qualities and duties of the professional nurse.

One of the greatest catastrophies that has happened to the care of the sick of our country was the closing of hundreds of small training schools for nurses which were turning out splendid healthy young women who had received efficient practical training in their local hospitals. We hear on all sides the expression of the supposed wisdom of requiring nurses to have a college education ere they entered training schools and these girls with college education are to do no menial work, but are to have a nurse-maid to perform the undesirable part of the care of the sick. Can the practical physician imagine any more worthless individual than a nurse who is to do no real nursing? As far as service goes, she would be as worthless as fashion is void of reason.

During the Crimean War at Scutari did Florence Nightingale ask some maid or orderly to pull the dead dog from under one of the hospitals which was filled with sick and dying soldiers; she performed that duty herself. Here is an example of breeding, culture and education, which remains still practical and acknowledges no menial side to the care of the sick. The young woman who thinks or feels that any duty to the sick is a menial service will enter the sick room a disgrace to herself and our profession.

The late Joseph Price in his private hospital had one of the first training schools in our country. His institution was a demonstration of just how efficient the nurse became without any didactic lectures. He had requests from all over our country to send one of his graduate nurses to take charge of certain hospitals. I refer to the above because it expresses, as nothing else does, the efficiency of clinical instruction to our nurses. Further, it brings out the talent that comes from the practical training the nurse obtains from bedside work.

I relate the following to further prove my point: After the death of Joseph Price, I became in possession of his institution and continued his training school for nurses.

At that date the State Board of Pennsylvania compelled all the training schools to meet certain qualifications consisting of so many hours of didactic instruction and the required hours for bedside work. We met the requirements and our nurses spent the usual long hours in the lecture room. I felt we were turning out very competent nurses, but I noticed when one of my own nurses and one of Doctor Price's nurses who had had no didactic lectures were taking care of the same patient, when one nurse was to be dismissed, it was always Doctor Price's nurse who was retained, so I began to ask the patients just why they chose the Price nurse; the answer was always, "she makes me so comfortable, turns me with such ease and is so helpful to me in every way".

In no sense am I preaching the worthlessness of didactic instruction; of course sensible and well chosen lectures to nurses are very desirable, but I do feel one-half the hours spent in the lecture room can be more profitably spent at the bedside or operating room. The time spent in the study of physiological chemistry by the average nurse is of very little practical use to her in her profession and that the same must be looked upon as educational luxury and just how long will such instructions remain educational is a conjecture. A few hours spent in the dissecting room under an anatomical demonstrator on the already dissected body should be a profit to the receptive nurse, but I do not feel too many hours should be spent in the laboratory on dissection of animals or insects. Demonstration by the microscope of the circulation of the frog's foot seems to always leave its impression with the average nurse. The study of physiology is one of the most interesting and enticing studies, but much time spent in the laboratory by the nurse should be spent in hours that do not conflict with her clinical training.

When it comes to actual nursing, it is the function of the nurse to carry out the doctor's orders, make the patient comfortable and constantly watch for untoward symptoms. It is the practical experience of the nurse which gives her that keen sense that all is not well and educates her to the accurate and early recognition of approaching danger and further prepares her to anticipate approaching complications.

The physician should uphold the nurse in her position of professional dignity and the nurse's relation with the patient and physician must be such that such dignity can be defended by the profession. Nothing more pleases me than to hear the professional nurse say, "I am willing to take care of this patient without pay", but I have not heard such declaration in the past few years as often as is my like. When the professional nurse refuses to have such charity in her heart she is no longer a member of our profession, nor can the medical profession defend her in her professional rights.

In didactic instruction to the nurses they should be taught to mother the patient. The nurse who has raised a dog or cat and mothered them or has administered maternal care to either a young brother or sister always makes a better nurse for such service. Take the soul out of nursing and you have robbed her profession of its humanity and humiliated its dignity. It is difficult to reconcile the many views held by the medical profession and also those who are passing upon the qualifications of the professional nurse. Hundreds of small training schools for nurses were closed with the excuse that there was not sufficient departmental opportunity for the training of nurses.

The surgeon, the obstetrician, the psychiatrist and the medical practitioner all appreciate special training in their special work. However, it does not follow that the nurse who has not taken a special course in these specialties cannot give excellent care to the particular condition. I have seen this demonstrated hundreds of times and I have also seen the nurse who had the broad education which our nurses get in the average hospital, take the patient from the nurse who had followed a special course in training.

There is no objection to the graduate nurse taking a special postgraduate course in nursing in any line.

Have you ever been a witness to the young woman who has had several weeks or months of didactic lectures before she was given any bedside practice and then witness her embarrassment when she attempted to put into practice what she had been lectured on in the classroom? She is almost as much lost as the man without a watch who consults his sundial on a cloudy day.

Let us have more practical schools for the training of those healthy young women who may reside in any particular location and who have a common school or high school education and who are anxious to follow the life of the professional nurse.

There never was an hour in our country when we had too many nurses and I doubt if there ever was a day when the sick had the nursing care that was their right.

Whenever scientific thought in any line cannot be put into practical application its scientific value is nil. Neither physician nor nurse can acquire judgment until she or he has had practical experience, for, after all, judgment and wisdom come from crystallized experience.

The professional nurse today is on the viewing stand. She may keep her head in the sun and remain a very substantial post upon which the medical profession may lean, but she will fall from grace and professional dignity if she places a definite price upon her services and remains unyielding and refuses to lend her services to the poor sick. Humanity is made of finer stuff than dollars and cents.

J. W. KENNEDY, M.D.

EDITOR'S NOTE: Dr. Kennedy was the last assistant of that great Virginian, Dr. Joseph Price in Philadelphia, of whom Howard Kelly said "He taught more gynecology than all the medical schools in the country."

Floral Eponym (20)

ENGELMANNIA PINNATIFIDA, TORR. & GRAY

OPUNTIA ENGELMANNII, SALM-DYCK.

GEORGE ENGELMANN, 1809-1884.

E. pinnatifida is a stout perennial that grows in dry places from Kansas to Louisiana and Arizona to Mexico. It is frequently planted in wild gardens.

O. Engelmannii is the most widely distributed and abundant of the large flat stemmed opuntias in the United States. It has yellow flowers, red within, fading to red.

Dr. George Engelmann was born in Frankfort-on-the-Main. He studied at Heidelberg where he became the friend of Louis Agassiz. He graduated in medicine at Würzburg. When he moved to America his interest in botany continued and he described the cacti on the Pacific Railroad survey and the United States-Mexican boundary survey. His medical activities were confined to St. Louis. He was especially interested in obstetrics and introduced the obstetrical forceps to the West. He founded the St. Louis Academy of Science, and the Shaw Botanical Garden owes much to his efforts. His only son, George Julius Engelmann was a famous gynecologist and the author of *Labor Among Primitive Peoples, Ancient and Modern*.

TUMORS OF THE BLADDER*

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The honor of being asked to address you is one that I very greatly appreciate. No one, familiar, as I am, with the history of this Academy can be unmindful of your fine traditions. Many great physicians and surgeons of this city, in past years have contributed notably to medical education and medical practice in this country. Their influence still lives in your society and is no doubt a guiding stimulus that lends to your accomplishments today. Richmond has just reason for pride in her medical heritage as well as for the outstanding profession and medical school of the present day.

In electing to speak to you on the subject of bladder tumor, it was decided that the subject would be approached in the least technical fashion and certain generalizations made, rather than any attempt to deal with any particular phase of the subject. As a site for epithelial tumors, the bladder ranks high among the organs of the body. Connective tissue tumors will not be considered because of their extreme rarity. Both benign and malignant epithelial neoplasms occur in about equal proportion and the male appears to be three times more liable to the disease than the female. The bladder is easily examined by instrumental means which makes for early and accurate diagnosis in suspected cases.

Most of our present knowledge of diagnosis and treatment of bladder tumor has developed within the last twenty-five years. The advent of cystoscopy, followed in 1910 by the work of Edwin Beer on electric fulguration, and a little later the pioneer contribution of Geraghty upon the clinico-pathological classification of these growths, are the foundation stones upon which our modern conception of them depends. The more recent advances in radium and radon therapy, together with development of high voltage x-ray equipment, have added to our facilities for successful treatment. Statistics from various sources over the past ten years show a consistent improvement in the number of 5-year cures. Results today, though far from satisfactory,

are so much improved that we now feel that malignancy of the bladder may be as successfully treated as that occurring in most any other organ of the body. Unfortunately, no relationship to hormonal activity has yet been found similar to that existing between the male hormone and carcinoma of the prostate.

The clinical classification very closely approximates the pathological. In other words, the surgeon is able, as he views the growth through the cystoscope, to have in general a fairly accurate impression of its pathological nature. Most clinicians and pathologists agree that three classes of tumors should be recognized. First, the papillomata generally regarded as benign but acknowledged to be potentially malignant. They do not invade but may recur locally or transplant themselves and become multiple before removal, or recur afterwards. Second, the papillary carcinoma, usually occurring singly with a very short pedicle. The base is wider than that of the simple papilloma and there is the tendency to invade the deeper tissues. The third class is the solid invading carcinoma usually of a high degree of malignancy. Various gradations of these growths occur but in general they may be roughly classified by appearance. This fact is of considerable value in outlining the treatment of the particular case. Most pathologists, I believe, like to use Broders' classification in expressing the degree of malignancy of these tumors. In this system of grading the simple papilloma is grade 1; the papillary carcinoma, grades 2 and 3, depending upon the degree of activity and invasion, while grade 4 denotes the highly malignant invasive carcinoma.

It is possible for a tumor of the bladder to advance to considerable size without the patient experiencing any symptoms. This is not the rule and, fortunately, hematuria is likely to occur quite early in the disease. The bleeding is usually painless, more certainly so if infection has not intervened. Since bladder tumors are the most common new growth occurring in the urinary tract, the painless passage of blood is the symptom that makes one most likely to suspect the presence of tumor in the bladder. This is especially true if the patient be within

*Read by invitation at a meeting of the Richmond Academy of Medicine on May 23, 1944.

the cancer age. As the growth advances in size, suprapubic pain usually develops. The growth acts as a foreign body, producing irritation, possibly some obstruction and predisposes to infection; therefore, signs and symptoms of cystitis occur on a progressive scale. The development of metastatic lesions seldom occurs early and, unlike some other forms of malignant disease, distant lesions are almost never found before the primary cancer has been discovered. Cystoscopy makes the diagnosis. X-ray examination is of no value except by cystography when the bladder is filled with a radio-paque solution. The resulting cystograms are often of considerable value in determining the size of the lesion by showing the extent of the filling defect in the bladder. The diagnosis is easy once the patient is under observation. The average case is well advanced when first seen and this circumstance offers a real challenge to us as physicians—the education of the public to the necessity for early examination in cases of painless hematuria.

Unlike many other types of malignant disease, metastasis, though it occurs quite frequently, is not the usual cause of death in bladder cancer. As a rule interference with function of the bladder, ureters or urethra which predisposes to urinary infection, ultimately leads to death. Invasion of the lower ureter very commonly occurs and this results in urinary stasis on the affected side. Pyelonephritis and pyonephrosis often ensue. It is not uncommon for the late case to present the appearance of acute or sub-acute urinary infection.

The treatment depends upon many factors: the size, degree of malignancy, and location of the tumor, the experience, particular skill and, I might say the prejudice of the surgeon. There are some who prefer radiation, either by x-ray or radium, to surgery, whether it be transvesical through the cystoscope or by open operation. The majority of urological surgeons today prefer a combination of these methods, depending upon the particular problems presented by the individual case. Most simple papillomata may be successfully treated by high frequency fulguration through the cystoscope. These growths, often multiple, can be easily destroyed in this way. Many show a distinct tendency to recur and often require repeated treatments of the original tumor or of new ones that have become transplanted from the original growth.

The papillary carcinomas require a combination

of procedures. When the growth is located on the posterior wall of the bladder above the ureteral orifices or at the dome, open operation with resection of a portion of the bladder containing the growth is usually done. This is preceded by fulguration through the cystoscope, and is followed by implantation of radon seeds or radium needles around the incision in the bladder. If a ureteral orifice is involved, resection of that portion of the bladder including the lower end of the ureter is carried out and the ureter implanted elsewhere in the organ. Dr. Austin Dodson has devised a unique method of handling the newly implanted ureter in such cases. In cases of highly malignant lesions of the bladder base total cystectomy with implantation of both ureters into the sigmoid is sometimes done. This radical treatment is reserved for those in whom metastasis is not evident and whose general condition warrants major surgery. X-ray treatment is generally prescribed after any operative procedure. Generally speaking, these tumors, though they vary considerably, are fairly radio-sensitive and undoubtedly radiation in most cases is of considerable value. We have seen very few serious complications from deep therapy radiation. A considerable number are reported by some writers. It is true that irritation of the bladder or rectum often occurs following massive doses, but tends to clear up after a week or ten days. It is probable that most of the serious late complications from radiation occur in these cases that are treated by both radium and x-ray. In our work the radiologist prescribes the dosage of both the radium and x-ray and all of this form of treatment is given under his general direction. Recurrences are common even in benign tumors and follow-up studies should be conducted at intervals of a few months.

The results of treatment in these cases have improved remarkably in the past two decades. Col. J. E. Ash, of the Army Medical Museum, which institution conducts a bladder tumor registry for the American Urological Association, in reviewing the statistics of the registry, states that in cases of simple papillomata 35 to 40 per cent were living and without tumor after 5 years. In considering all infiltrating carcinomas, 10 to 12 per cent were living and without tumor after 5 years. These figures are based on a series of 3,200 cases studied by the registry. They were treated by urologists from all over America. The results are closely approximated in

the statistics given by other writers. They, of course, include all cases—the far advanced ones as well as those seen at a time when proper treatment could be expected to give the best results. If only those seen early were considered it is probable that the percentage of those living and well after 5 years would be doubled, perhaps tripled. A brief review of a few cases seen in recent years will illustrate this point.

1. A man, aged 37, came complaining of painful, frequent urination. He had passed blood in his urine at intervals for three and one-half years—this, in spite of the fact that he lived within stone's throw of a modern hospital operating free clinics. Examination revealed a large papillomatous tumor located just above the left ureteral orifice. The tumor was removed by high frequency current, radon seeds implanted and deep therapy x-ray later administered. The pathological report was grade 2 carcinoma. Open operation with resection of the bladder wall and transplantation of ureter was not done because it was felt that invasion and pelvic metastasis had already occurred. The case was first seen six months ago, and one local recurrence was treated a week ago. The prognosis is poor.

2. A college professor, aged 70, was seen four years ago, the day after he had noticed hematuria for the first time. A small, highly malignant invasive type of carcinoma was found on the posterior wall of the bladder. The lesion was about $\frac{1}{4}$ inch in diameter. Biopsy confirmed the diagnosis. The area was thoroughly fulgurated and radon seeds implanted. Because of the patient's age, no more radical treatment was advised. This patient has had no recurrence, having been examined a month ago.

3. A woman, aged 50, came complaining of hematuria of three weeks' duration. A papillomatous tumor with wide base was found near the vault of the bladder. Biopsy showed papillary carcinoma grade 3. The lesion, about $\frac{3}{4}$ inch in diameter, was fulgurated through the cystoscope. Suprapubic incision was made, the bladder opened and a portion of the bladder removed containing the tumor in its center. Radon seeds were implanted. This patient is living and well after 5 years.

4. A Jewish storekeeper, aged 55, was seen eighteen months ago with the history of hematuria for almost two years. A large papillary carcinoma was found involving the left ureteral orifice. Open

operation was done with resection of a large area of the bladder containing the tumor and the lower portion of the ureter. Ureteral implantation was carried out, radon seeds inserted, followed later by deep therapy. The patient has done well until recently recurrence has occurred and further radiation resorted to. The outlook is not good.

The occurrence of bladder tumor in one who has had some previous urological disease often causes him to assume that his symptoms are due to a recurrence of the former trouble. This delays the diagnosis and the chances of cure. Such was the case in a 48 year old man who has had repeated attacks of renal colic associated with some hematuria. He had passed his last stone 3 years before and had been free of symptoms for over twelve months, when painless hematuria developed. He paid little attention to it and bled at intervals for 18 months when retention of urine developed and he sought aid. A large papillary carcinoma just within the urethral orifice was found. It was so located as to make transurethral removal difficult, so suprapubic cystotomy was done, the tumor removed and radon implanted. The pathological report showed grade 2 carcinoma.

The facts learned from studying such cases brings one to a consideration of the most important element of the subject: how the profession can best impress upon the public the importance of the occurrence of early symptoms of bladder cancer. The problem is much the same as that presented by malignant disease elsewhere. There is this difference, however; symptoms of bladder tumor often occur early in the disease, the diagnosis is easily and positively made and treatment, usually not of a radical nature, gives a high percentage of cures. We all agree that education is the key to the solution, but just what is the best program is the question. Tumor clinics and societies for control of cancer are necessary agencies that carry on important phases of cancer work, part of which is educational. They fail to reach many persons in remote districts. Cancer literature if properly conceived and presented fills a good purpose for those who receive and read it. Radio may be advantageously used to a very minor degree. In dealing with a subject of such vital importance as prevention of death from cancer, we should, I believe, recognize that it must be presented by the profession in a serious and dignified way and an attempt made to make the usual symptoms

of cancer the common knowledge of the ordinary person. I know of no way this can be accomplished except through the schools. If in the high schools a short course is given by a physician, in connection with the study of hygiene, covering briefly the symptoms of cancer, it would probably have more ultimate effect for good than all the publicity propaganda that our combined organizations can muster. It must be realized that instruction should be given with much tact lest morbid fear of cancer be spread among the young people. Until something can be done to impress upon the average person that passage of blood in the urine in a person over forty calls for examination, we can expect very little improvement in results of treatment of bladder tumor. The profession generally is keenly aware of this, but the doctor often is not consulted for months after the onset of the symptoms and too often his advice is not taken when he suggests special studies for diagnosis. Whether cancer is on the increase or not is a debatable question. To many of us, it certainly seems to be. The problem that confronts us all, whatever our type of work, is how we can see the patient early enough to be of real service to him. Some program of general education, seriously and tactfully carried out by the medical profession, seems to be the only logical answer.

REPORT OF A CASE OF BLADDER TUMOR IN A MALE CHILD THREE YEARS OLD

Bladder tumors in infancy and in the first decade of life are among the rarest forms of pathological lesions noted in the urinary tract. Rathbun, in 1937, collected all of the cases up until that time and commented upon the extreme rarity of the disease. Deming, in 1924, carefully reviewed the literature and found only 64 authentic cases of bladder tumor occurring in the first decade of life. Rathbun's report brought the number up to 75. All of the cases reported, with the exception of 2, were of a sarcomatous nature—37 being reported as sarcoma, 16 as myxoma, 5 as fibroma, 2 as rhabdomyoma, 1 as dermoid, 1 as myoma, and 1 of undetermined pathology.

We are reporting this case as sarcoma of the bladder although there is, as I will discuss later, some question as to the exact nature of it. Sarcoma of the bladder is rare at any age, but it is much more frequent in children than any other type of bladder tumor.

This child, three years and four months old, was admitted to Watts Hospital on April 17, 1942, and died 5 days later. The chief complaint was pain on urination, frequency, and recurrent urinary retention. About 2 months before this child was seen he had been admitted to another hospital where a diagnosis of "congenital valves of the urethra" was made. An attempt was made to destroy the valves by fulguration, but a later examination in the same hospital resulted in the diagnosis of bladder tumor.



Baby C.—Sarcoma of the bladder.

A small amount of tissue was removed for biopsy but evidently none of the tumor was included in the specimen. Because of the retention and pain, a perineal urethrotomy was done and a catheter left in place. The child did not tolerate the catheter well and, because of the difficulty in keeping it in place, it was finally removed and when he was seen by us he was voiding through the perineal fistula with a great deal of difficulty. The past history revealed nothing of any importance as relating to the present illness. The symptoms of bladder distress began about 4 months before he was admitted to Watts Hospital. All routine examinations were negative, except that there was a urea retention amounting to 60 mgm. per cent. We were able to

cystoscope the child and found that the bladder was almost filled with a whitish, glistening mass. A small amount of tissue was removed, and the pathological report as made by Colonel Ash is as follows: "The process is interpreted as a rather poorly differentiated embryonal mesenchymal tumor. We have several such in the Registry but the picture is not always the same. The last one before your case was definitely fibrous without the marked pleomorphism. It was thought at first that this tumor was one of striped muscle but later examinations failed to show this. We will therefore have to conclude that it is a poorly differentiated embryonal mesenchymal tumor."

In our opinion, these tumors are not as rare as the literature would lead us to believe. This is the second case we have seen. The first one was in a boy 5 years old, and the pathological report was almost the same as this last one. There seems to be some doubt among pathologists as to just how to classify these tumors. In the first case, we sent tissue to a number of pathologists and nearly all of them had a little different slant on the real nature of it. It seems evident that they belong to the connective tissue tumors and are usually of a mixed type, likely embryonal in nature.

The diagnosis is seldom made until the case is

practically hopeless. Difficulty of urination is usually the first symptom. Hematuria does not occur with anything like the frequency that it does in adult epithelial tumors. Deming reports that there have been 8 cases apparently cured by total cystectomy and implantation of the ureters into the bowel. In considering cures in these cases I think we will have to realize that it is possible that the type of tumor may not have been the same in all of the cases and that the cures may have resulted from treatment of a very much less malignant type of growth than is usually seen.

This child died in uremia, with convulsions, having lived only 5 days after being admitted to the hospital. The pathological specimens are shown. It is noted that the interior of the bladder is completely filled with a white, glistening type of growth. Both ureters are markedly compressed and dilated, and there is extensive suppurative pyelonephritis in both kidneys. Free pus was found in a number of these abscesses, some of which were extra-renal. Death, of course, was due to renal insufficiency from back pressure resulting from obstruction in both ureters, together with the toxemia of infection. No evidence of metastasis was found at autopsy in any part of the body.

111 Corcoran Street.

Wounded Flown from Invasion Front.

Employing new techniques to save life as fast as modern war contrives to destroy it, the Army Air Forces medical corps has pressed into service a new "flying jeep" type of airplane to rush wounded Allied soldiers from the French invasion front to hospitals removed from the scene of battle.

More than 7,000 casualties were evacuated by air during the first three weeks following the Normandy invasion, according to Major General David N. W. Grant, Air Surgeon, USAAF. Submitting additional evidence of the life-saving and morale-building worth of air evacuation, General Grant, as guest speaker of Schenley Laboratories, Inc., makers of penicillin, revealed in the coast to coast broadcast, that more than a quarter of a million sick and wounded, American and Allied, have been carried out of battle areas by military aircraft since Pearl

Harbor. This number is being enlarged, all over the world, at the rate of 1,000 patients a day, he reported.

Outlining the expansion and refinement of this spectacular means of hospital transportation, the Virginia-born medical officer said that the secret of the success of aerial evacuation in every theater of operations lies in swift transportation and adequate hospitalization.

The "flying jeep" is used to snatch wounded men from under the muzzles of the enemy's guns and speed them on the first leg of their aerial journey to hospitals. According to General Grant, a total of several hundred flight surgeons, flight nurses and enlisted technicians are assigned to this duty of bringing the wounded out of France under the protective cover of our fighter planes.

ASTHMATIC ATELECTASIS SIMULATING PNEUMONIA*

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Atelectasis according to its Greek extraction signifies "imperfect distention" and was first described in 1811.¹ It aroused little clinical interest until the early nineteen hundreds when its frequency in connection with the post-operative state was manifest. To the present time pulmonary atelectasis more or less carries the connotations of being a post-operative complication. In 1928 Sante² added atelectasis to the list of troubles which harass the asthmatic by demonstrating a case of massive pulmonary collapse which occurred during an asthmatic attack in an adult. The literature since then contains a scattering of case reports and some cogent speculation as to why the respiratory unit of the asthmatic lung should suddenly de-aerate.³⁻⁹

The first case of atelectasis in an asthmatic confronting the senior author was in 1929. The patient was a middle-aged, psychotic, white woman, a known asthmatic, who presented signs of pulmonic collapse. Despite active treatment, including bronchoscopy, she promptly died. Autopsy disclosed atelectasis of one lung with constriction of the bronchi to the involved tissue. Some type of autonomic paralysis was considered as an etiologic possibility although its correlation with the asthma was not appreciated. Since that time a number of cases, typical and atypical, have been encountered. These four cases show some of the variations.

Case 1. This young lady was first seen as a child of seven because of bronchial asthma. She reappeared at the age of 16 and during the interim had gotten along fairly well, so far as the asthma was concerned, but stated she frequently had what was thought to be pneumonia. This episode, her third for the year, was similar to the others and was characterized by fever of 101-102°, pain in the right chest, and dyspnea. Physical findings included diminished or absent breath sounds and dullness in the right axilla and base with displacement of the heart to the right side. Sulfathiazole had been given

previously and had been ineffective. Chest films showed an opaque area at the base of the right lung with marked retraction of the trachea to this side. Bronchoscopy under local anesthesia revealed the mucous membrane reddened and swollen and a large amount of purulent secretion was aspirated. Following a bronchogram there was considerable cough and expectoration. Her fever subsided and she was discharged six days after admission. Film six weeks later showed residual oil. Six months later she had recurrence of her symptoms, this time the atelectasis being in the upper right lobe, which subsided following lung mapping.

Case 2. A college girl of 19 with a history of asthmatic bronchitis developed pain in her lower left chest associated with fever and cough. A check film taken at the college infirmary showed a density in the left base and she was hospitalized, the tentative diagnosis being bronchopneumonia with pleural effusion. Sulfa drugs had produced no marked change and had been discontinued. The temperature gradually subsided and she was returned to her home to convalesce. Two weeks later a few basal rales could be elicited and the base had re-expanded. No additional treatment was indicated.

Case 3. A graduate nurse of 31 with asthmatic symptoms was seen in consultation (December, 1942) with her family physician. The findings were of an asthmatic bronchitis with recurring bronchial asthma. On symptomatic treatment she got along fairly well for four months when she was again seen because of two sudden attacks of pain in the left chest and left shoulder aggravated by a non-productive cough. Anterior-posterior films of chest showed no marked change but the lateral view revealed a well demarcated area of atelectasis. Symptomatic treatment and bed rest was followed by re-expansion and disappearance of symptoms.

Case 4. This case illustrates post-operative atelectasis in the asthmatic. In September, 1943, a 30 year old white woman was hospitalized for a perineorrhaphy. She gave a history of asthmatic bouts, the last having been a month prior. Occasional

*Read at the annual meeting of the Medical Society of Virginia in Roanoke, October 25-27, 1943. (Due to inability of authors to be present, this was read by Dr. E. C. Harper, of Richmond.)

asthmatic rhonchi could be detected. Film of the chest was negative. The repair was done under gas-ether anesthesia. On her 2nd post-operative day she developed dyspnea and pain in the left chest. Temperature 102°, pulse 140, resp. 34. There was absence of breath sounds and dullness in the left base with cardiac displacement to the left. She was made to cough and produced considerable thick tenacious sputum. Chest film showed elevation of the left diaphragm with retraction of the mediastinum to the left.

Bronchoscopy was considered but her signs and symptoms subsided fairly rapidly following frequent turnings and encouraging her to cough. Her subsequent course was uneventful.

Obstruction of a bronchus is well established as the cause of partial or complete collapse of the lung. The processes which can produce bronchial obstruction, exclusive of tumor and foreign body, include:

1. Inflammatory reaction
2. Secretion of thick mucus
3. Spasm of the musculature
4. Paradoxic collapse of bronchi during expiration.

All of these factors may come to play in the asthmatic. Coughing is the attempt to dislodge mucus and, if successful, frequently gives the asthmatic relief; considerable asthmatic treatment is directed toward this end. Asthma is frequently initiated or aggravated by infection and, in our experience, particularly by the paranasal sinuses. That spasm of the bronchial musculature follows sympathetic stimuli has recently been demonstrated by de Takats,¹⁰ and the bronchiolar spasm of asthma itself may be of a reflex nature as well as an allergic phenomenon.

Following bronchial obstruction from any cause the trapped air is absorbed by a fairly complicated gaseous interchange involving intra-alveolar pressure and gas pressure of the venous blood. The collapse of the lung increases the intrathoracic negative pressure with resulting upward drawing of the diaphragm, shift of the mediastinum to the affected side, and the uncollapsed portions of the lung are expanded to a greater extent (compensatory emphysema) to fill the unoccupied space.¹¹ The temperature rise is attributed to the inflammatory reaction produced by the retained secretions and the micro-organisms they contain. The dyspnea and high pulse rate, both of which are increased out of proportion to the temperature, may be of cardiac

origin due to mediastinal displacement with pressure on the great veins, and hence inadequate filling of the heart.

The diagnosis is made with comparative ease if atelectasis is considered. A history of asthmatic nature, sudden onset of pain in the chest and dyspnea, cough, and pulse rate out of proportion to the temperature warrants an x-ray examination. We have seen this condition only in women, but it has been reported in children and men.

Treatment consists of opening the bronchus, which may mean merely encouraging the patient to cough and expel the mucus. If relief does not follow after several days of complete bed rest, or if the patient becomes worse, bronchoscopy should be carried out, the secretions aspirated, and the lung mapped. In our experience the mechanical stimulation of the instrument seems to be the important factor and not the material actually aspirated. Chemotherapy has been ineffective. Oxygen, because it increases the viscosity of the bronchial secretions and indirectly decreases respiratory stimuli, may be contraindicated. Elevation of the foot of the bed to promote drainage, antispasmodics, expectorants, and inhalation of CO₂ may be helpful.

Of the immediate complications, the most serious is vascular collapse due to mediastinal shift. Pneumonia, pleurisy with effusion, or empyema may result. On several occasions Dr. Nalls has performed a bronchoscopy with the patient on a hospital bed in the patient's room. As to the sequela, any condition which increases the negative pressure within the thorax increases the tendency toward bronchiectasis. This requirement is adequately met by atelectasis. We have encountered bronchiectasis often enough in this type of patient to be convinced that it is a rather frequent finding, and if the patient is given benefit of a bronchiogram the bronchiectasis may be demonstrated.

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801 Professional Building.

The American Social Hygiene Association,

In its annual report for 1943 states that an all-time high was reached last year in the nation's fight against the venereal diseases, but the attack must be maintained and strengthened, since gonorrhea and syphilis remain this country's most serious wartime health problems.

Although the rate "is the lowest in our military history," venereal disease is still "a leading cause of lost man days among the armed forces," according to Dr. Charles Walter Clarke, executive director. "Indications of increased venereal disease prevalence in civilian communities are causing anxiety among civil and military health leaders. They know that increased civilian rates are likely to be reflected in higher military rates."

"The past year's experience again substantiated the basic fact that active, united support by the public of all measures—educational, medical, protective—directed against the venereal diseases is the key to victory against these infections."

In conclusion, the report says that until the war is won, "the major objective of the American Social Hygiene Association must continue to be helping to keep soldiers, sailors, marines and airmen at their posts and fit to fight, to keep workers fit to produce the instruments of war, and to protect youth in wartime."

In 1943, the Association's medical staff members served as consultants to several Federal agencies, and participated in the training of Army, Navy and Public Health Service venereal disease control offices at the Army Medical School, Johns Hopkins University, Harvard University and the Bethesda headquarters of the U. S. Public Health Service. It also gave guidance to 145 affiliated societies and helped form 11 new societies in the course of the

year. The cooperation of 50 national voluntary agencies was obtained.

The American Social Hygiene Association, a participating service of the National War Fund, officially represents voluntary health agencies in carrying out the Federal Government's venereal disease control program. It is teamed up with the Army, Navy, U. S. Public Health Service and the Social Protection Division of the Federal Security Agency, and cooperates with state and local health and law enforcement authorities, social hygiene societies and other citizen groups in preventing the infection of soldiers, sailors and war industry workers. The virtual wiping out of commercialized prostitution, a prime source of venereal infection, is listed as one of the major achievements of this wartime combination of health agencies and citizen groups.

Surgical Operating Trucks Take Hospital to Wounded Soldier.

The Army Medical Department has established Mobile Surgical groups, which provide hospital facilities for wounded soldiers near the front lines. The tent is carried on a two-wheel trailer along with an electrical generating unit; the hospital vehicle can be made ready for full operation within 30 minutes. Sufficient room is provided for operating teams composed of surgeons, nurses and technicians, making it possible for two men to be operated upon simultaneously. The unit is capable of caring for from 80 to 100 men a day. The truck is equipped with a variety of special instruments for orthopedic, nerve, chest, maxillofacial and brain surgery; operating tables, steam and dry sterilizers, lighting equipment, medicines, blood plasma, bandages and dressings, record files, auxiliary power unit, surgical linens and operating gowns.

THE DIAGNOSTIC VALUE AND THE TECHNIQUE OF THE ASPIRATION BIOPSY OF STERNAL MARROW*

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Clifton Forge, Virginia.

In these times of war when every physician has to carry an additional load of work, a trend toward simplification of diagnostic procedures seems logical. Still, we must be on guard lest nothing be omitted that is important for the benefit of the patient. This is especially true if such diagnostic procedure is simple and requires relatively little time and experience.

In dealing with a patient with cardiovascular disease we are rarely satisfied with the measurement of the blood pressure, and the evaluation of the pulse but, with the help of intricate apparatus and techniques as electro-cardiography, fluoroscopy, venous pressure and circulation time determinations, we try to obtain as perfect a picture as possible of the actual condition of the circulatory organs.

On the other hand, in the study of disorders of the blood, too many are still relying entirely on the examination of a drop of capillary or venous blood and neglect the fair chance of investigating the blood-forming organs in which the trouble originates. While every physician now realizes that a certain pulse rate and rhythm may not at all correspond to the heart action, there is no sufficient appreciation of the fact that the routine examination of the peripheral blood may perhaps tell us many things but surely not everything, and, as a matter of fact, may even be deceptive by concealing or falsifying the true state of the hemopoietic system.

It is, indeed, remarkable that the study of an organ as large and essential as the bone marrow should so frequently be neglected. After all, it is the largest organ in our body, accounting for no less than 4.5 per cent of our total body weight. Even in the adult where about half of it is inactive under normal circumstances, the weight of the active red marrow equals that of the liver. As far as its function is concerned, it is, of course, the site of production of the red cells, the granulocytes and the platelets. The daily output of red cells alone is estimated at 300 billions, which is an impressive figure even in our days of astronomical budgets.

There is no doubt that the marrow as part of the reticulo-endothelial system plays an important role in the immune processes of the body.

It is on the basis of these considerations that I have become convinced that the examination of the bone marrow by aspiration from the sternal cavity is not utilized as it should and could be. It is the purpose of this presentation to illustrate this contention with some cases that were seen at the C. and O. Hospital in the past year.

The first slide (fig. 1) is from the marrow of a 20 year old white woman whose only complaint was soreness of the gums of two weeks' duration. She had a diffuse stomatitis and mild general lymphadenopathy. The blood count showed an increase of the white cells to 90,000 and approximately 75 per cent were myeloblasts. The diagnosis of acute myelogenous leukemia seemed certain despite the scarcity of symptoms and the fairly good general condition of the patient. But, as Kracke says: "There is no more unfortunate diagnosis that can be made in medicine than that of acute leukemia, especially since the patients are usually young people. It should, therefore, be made only after careful and thorough study with extreme reluctance and only after every other possibility has been exhausted. When the diagnosis has been established, it is a sentence to sure death." Our patient was discharged somewhat relieved by transfusions but she was dead in less than four weeks. It is in such a case that the examination of the marrow will furnish the desirable, conclusive evidence.

In myeloma or other tumors of the bone marrow, the direct examination supplies the only conclusive proof. Two such cases with entirely different symptomatology came under our observation during the past year. The first patient was a 52 year old man who had been suffering from severe back pain for 8 months. This pain eventually became almost intolerable and immobilized the patient completely. Except for tenderness of the ribs, nothing of significance was found. He had a moderate microcytic anemia. Chemical examination of the blood was not informative. On x-ray examination, extensive mottling of the bone was found and a diag-

*Read at the annual meeting of the Medical Society of Virginia in Roanoke, October 25-27, 1943.

nosis of generalized carcinomatosis was made. The next slide (fig. 2) shows the typical plasma cells which were present in the marrow in large numbers. The diagnosis of plasma cell myeloma was thus es-

pale and so drowsy that he fell asleep in the office while talking to the physician. Physical examination was essentially negative. Examination of the blood showed a macrocytic anemia of 2,080,000 red

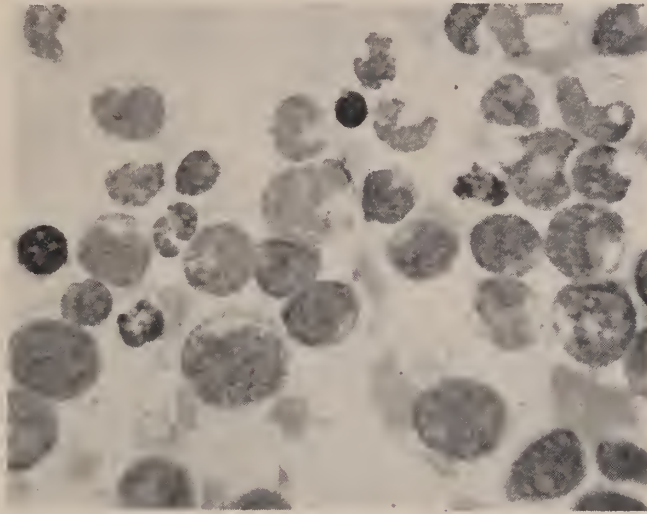


Fig. 1.—Acute myelogenous leukemia. Bone marrow smear.

tablished. Bence Jones bodies were now looked for in the urine and were present. The patient died a few weeks later at his home.

cells per cmm. and a normal white count. There was auto-agglutination of the red cells in the diluting fluid (Hayem's solution), a phenomenon ob-

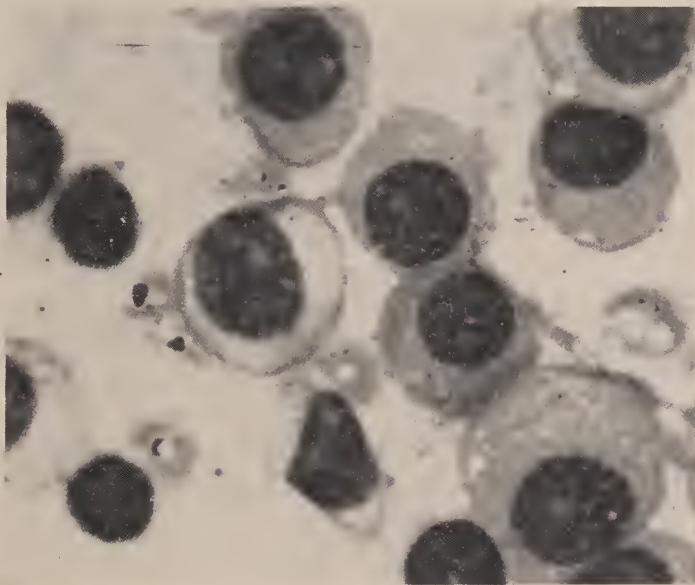


Fig. 2.—Plasma cell myeloma. Bone marrow smear. Magnification x 1440 diam.

The other patient was a 62 year old man who had been complaining of increasing fatiguability but had no other complaints. The patient was very

served in myeloma, kala-azar and a few other tropical diseases and reversible by warming the diluting fluid. The sedimentation rate was markedly accel-

erated. The urea nitrogen was 29. The total protein varied between 12 and 16, with an inversion of the A/G ratio. The serum phosphatase was 17 Bodansky units. The urine contained a moderate amount of albumin. No Bence Jones proteins were present. Roentgenograms that were now taken showed extensive lesions of the skeleton. The patient died about two weeks after admission. At autopsy, a large tumor destroying the sternum was found. The following slide (fig. 3) shows the histologic pattern of this tumor, a typical plasma cell myeloma. There was also a rather peculiar type of chronic nephritis which may possibly have some

was markedly dilated. The hemoglobin was too low to be estimated accurately. The red cells numbered 710,000, the white cells 3,250. There were 87 per cent lymphocytes. The temperature ranged between normal and 103°. The possibility of an aleukemic lymphatic leukemia was considered. Aspiration of the sternal marrow revealed a severe hypoplasia bordering on aplasia. There was no evidence of a leukemic process. It became thus obvious that the relative increase of lymphocytes in the peripheral blood was due to the disappearance of the myelogenous elements. A series of transfusions resulted in complete recovery within two weeks. Un-

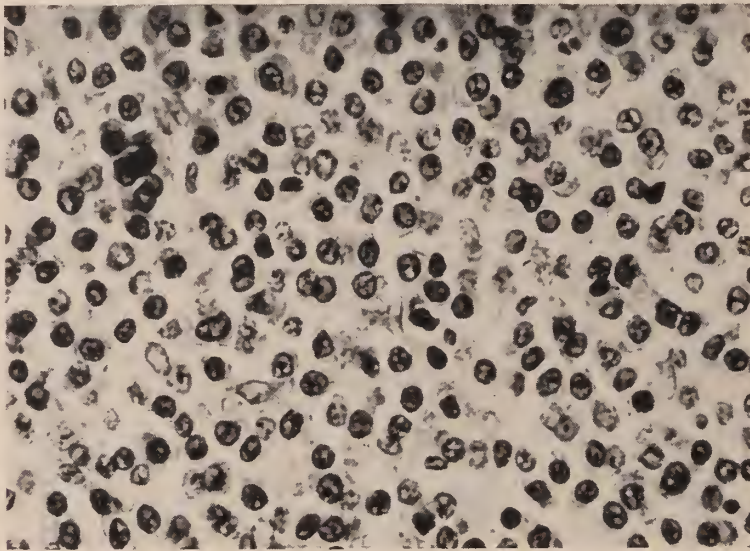


Fig. 3.—Plasma cell myeloma. Section tumor sternum.

connection with the severe disturbance of the protein metabolism.

In other instances, the examination of the marrow will correct an erroneous conception as gained by the study of the peripheral blood alone. A 5 year old boy was well until last Winter. At that time he was treated by several physicians for "rheumatism" without any result. He was seen in another hospital but discharged because nothing of significance was found. When his condition in April became worse and admission in the same hospital was sought, the parents were informed that the child would die of an incurable blood disease within 48 hours and that they should rather take him home. When he was seen on the next day, he was in acute distress with dyspnea, cyanosis, generalized edema, ascites and congestion of lungs and liver. The heart

fortunately, the story does not end at this point. The boy was seen repeatedly and did well until late in September when he came back to the hospital with fever, joint pains and swellings and an anemia of 3,050,000 red cells and 2,300 white cells with 62 per cent lymphocytes. There was no response to salicylates. Blood cultures were negative. While in the hospital, his count dropped again to 1,500,000, and was only partially restored to normal. The temperature was septic. So far we have been unable to reach a diagnosis or establish permanently successful therapy. It is our impression that this is primary aplastic anemia.

In the next case, a disorder of the blood-forming organs could be definitely ruled out by the examination of the marrow. A 38 year old white woman came to the hospital because of severe epistaxis

which was controlled only with difficulty. The nasal mucosa was hyperplastic and hyperemic. There was a moderate anemia. Blood studies, including fragility test, bleeding and clotting time, clot retraction, prothrombin time, etc., did not reveal anything of importance. The bone marrow was normal. It was concluded that the bleeding was not due to a blood dyscrasia. Renewed questioning now revealed that attacks of nose bleed occurred with certain regularity and frequently preceded menstruation. On the assumption that the attacks of epistaxis represented vicarious menstruation, the patient received 600 r in three sessions in order to obliterate the erectile tissue

often indispensable part of a hematological study, why is it so rarely used? Is, perhaps, the procedure too difficult or dangerous? Or is it not sufficiently tried?

The examination of the bone marrow is only about forty years old. The first attempts were made on the tibia by excision or trephine methods. The sternum was approached with the trephine for the first time by Seyfarth in 1923. The specimens thus obtained were good for smears and sections. However, the examination remained a minor surgical procedure which did not lend itself to routine or repeated examinations. It was therefore a decided

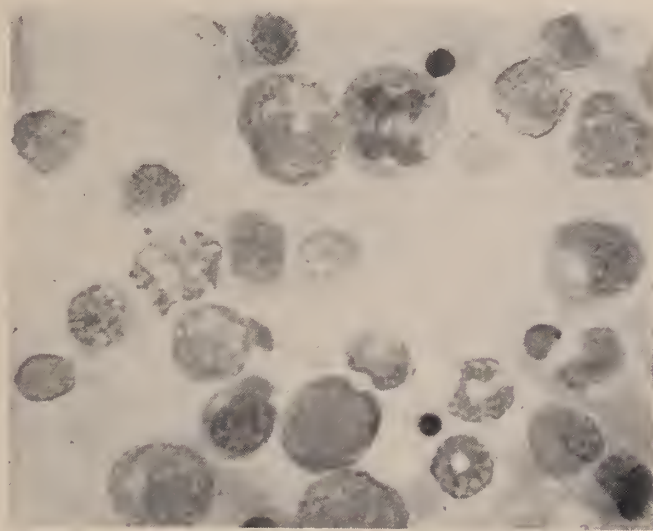


Fig. 4.—Pernicious anemia. Smear bone marrow.

in the nose. She has since been free of her attacks.

Of course, like every diagnostic procedure, the marrow biopsy is limited in its use. Indiscriminate application can only discredit it. For example, it was, at least in my own experience, not always possible to distinguish true pernicious anemia from other forms of macrocytic anemia, particularly during remission. However, a marrow like the one in the following slide (fig. 4) is seen practically in true pernicious anemia only.

On the other side, the examination of the bone marrow is an extremely valuable aid in detecting aleukemic aleukemias and disease of the R. E. S. as morbus Gaucher, Niemann-Pick, Hand-Schueller-Christian, etc.

If we conclude—and I think we must—that the examination of the bone marrow is an essential and

advance when Arinkin in 1929 introduced the needle biopsy of the sternal marrow. Among American authorities, Dameshek, Custer and Kracke advocate the trephine method, and the advantage of obtaining material for sections showing the topography of the cellular contents is obvious. However, the aspiration needle biopsy, as introduced over here by Reich, Holmes and Broun, has found greater favor and for very good reasons. It can be done at the bedside, even at the office or at home. It can be repeated as often as desired. There is no scar. It furnishes all information in practically every instance. The dry smears offer perfect detail for cytological studies. It is so simple that everybody can learn it with a little practice.

A new combination of needle and trephine has recently been advocated by Turkel and Bethell which

may offer a desirable compromise between the two methods.

There are small variations as to the site of the puncture which are not of consequence. I use the midline of the body between the second and third rib. The skin and subcutis are infiltrated with a local anesthetic. I always go down to the periosteum and infiltrate it too. Some people do not use an anesthetic at all. The choice of the needle is important. It must not be too long and must be of rigid construction. The bevel should be absolutely flush with the stilet lest small particles of bone become impacted and obstruct the needle. The needle is pushed down to the bone and after a foothold in the periosteum is obtained the anterior lamella is penetrated with a rotating motion. It is usually recommended to go in at an angle of 60 degrees but, by going in almost at a right angle, the layer of bone to be penetrated is thinner and I have seen no disadvantage in doing so. Since I use the proper needle, I have never failed to obtain sufficient material for examination. One-half to one cc. of marrow are aspirated. There are several ways of handling the specimen. I have found the following method, as used in the hematological department of Mount Sinai Hospital in New York, most practical. The material is expelled on a slide or a watch glass. It consists of liquid blood and yellowish grey particles of mar-

row. I make several smears of the liquid blood, draw up, in selected cases, some blood in a white cell pipette for a cell count and then make smears from the particles of marrow picked up with a fine forceps or the point of the stilet. The smear is made with a certain amount of pressure and it is remarkable to see that the cells are not damaged at all by this apparently rough handling. One point I wish to make, and that is that the slides must be scrupulously clean and have smooth edges. After they are well dry the smears are stained with Giemsa's or Wright's stain. Differential counts are done on 500 cells.

There is, of course, one difficulty which is greater than the technique of the puncture and that is the interpretation of the smear. The classification of the various cells is something which can only be learned by study and practice. But everyone who will make the effort will find that the time and energy required are well spent.

As a post scriptum I would like to add that I have employed the aspiration technique in reverse for the administration of blood, plasma and crystalloid solutions whenever venipuncture was difficult, as in edematous children, in obese persons, or patients in shock. This procedure has proven to be very satisfactory and surely superior to a laborious and time-consuming dissection.

"Country Doctor" Featured in Upjohn Window Display.

The Upjohn Company in their forthcoming window display will again honor the profession that is performing herculean home-front tasks at all hours of the day and night—seven days a week—and successfully maintaining the health of Americans at a high level.

The centerpiece of the display is the Norman Rockwell painting which has come to be called "The Country Doctor". It depicts a mother and three children in a doctor's office. This is the painting that won such acclaim from professional men and laymen alike when it first appeared on an Upjohn window display several years ago. It's really a command repeat performance—only this time the picture is in a larger and more dominant size. It will appear soon in drugstores all over this nation.

A Physiotherapy Clinic in the Jungle.

A physiotherapy clinic was created recently out of makeshift materials by members of a hospital unit on the Ledo Road, the highway which Allied troops are building from Assam, India, through Burma to China against the vigorous opposition of the Japanese. The chief of surgery in the unit, assigned a captain of the Medical Corps and a member of the Army Nurse Corps to the task.

They made a dry heat apparatus out of a crate and electric bulbs. Stirrups with ropes and weights made weight lifting devices, a Chinese officer provided a bicycle for leg exercises and old gasoline tanks were turned into whirlpool leg and arm baths. A water heater was created from a gasoline drum and the hard rubber core of an old soft ball was used for hand and finger exercises.

MENSTRUAL IRREGULARITY*

WILLIAM BICKERS, M.D.,
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Normal menstruation must be defined. Cyclic bleeding from a degenerating endometrium occurring at fairly regular intervals of 25 to 35 days in the human female is the generally accepted definition. More accurately, the term "degenerating endometrium" should be modified to read "degenerating secretory endometrium". This connotes not only the periodic issue of blood from the uterus, but also the cyclic pituitary-ovarian-endometrial rhythm which is the essential element in female sex physiology. Being its terminal event, menstruation is but the end result of the complex pituitary-ovarian-endometrial cycle. Menstruation is a phenomenon limited to certain primates, notably man, the chimpanzee, and monkey. Indeed, it is from experimental work upon the latter that much of our knowledge has been derived. The estrus bleeding of dogs and cows, the metestrus of guinea-pigs, and the placental sign of rats represent bleeding cycles not analogous to menstruation.¹

Periodicity of the human cycle has been studied and reported. Irregularity is the rule.² If a deviation of five days is considered within normal limits, then only one-third of women may be classified as "normal and regular". However, 97 per cent of all menstrual cycles fall between 18 and 42 days.² Average duration of menstruation is 4.6 days³; average estimated blood loss is 36.7 c.c.⁴ Age of onset is influenced by heredity and environment; in this country the average age of the menarche is 13.5 years. Gross irregularities of the cycle during the first year of menstruation are common; this is due to the fact that most girls do not begin to ovulate until 8 to 12 months after the menarche. Hartman has shown that in the monkey the first few menstrual cycles are nearly always anovulatory;⁵ the same is true of the human. Delay in the appearance of the menses until the 15th year is not uncommon but delay beyond this age should be taken as evidence of a serious endocrine or anatomical defect.

NORMAL MENSTRUAL CYCLE

Three organs are directly concerned with men-

struation; the anterior pituitary, the ovary, and the uterus. The function and relationships of these organs may be altered by many modifying factors; tuberculosis, rickets, the anemias, thyroid disease, congenital anomalies of the genital tract, and pelvic pathology of inflammatory or neoplastic origin are the most common ones. In this discussion only passing mention can be made of these factors.

Anterior Pituitary.—Here is produced the all-important gonadotropic hormone whose function it is to initiate and stimulate the adolescent ovary to begin its function and thereafter to maintain it. Ablation of the anterior pituitary results in prompt atrophy of the ovary and cessation of menstruation. The gonadotropin has a dual function. Beginning about the third day of menstruation it begins to produce in ever increasing amounts to the mid-cycle the follicle stimulating principle which is responsible for the growth, maturation, and ultimate rupture of the Graafian follicle. Following rupture of the follicle and extrusion of the ovum the anterior pituitary begins to produce its luteinizing principle which acts upon the ruptured follicle converting it into the corpus luteum.

The Ovary.—Under the stimulation of the gonadotropic hormone, gonadotropin, a number of Graafian follicles are started on their way to maturity about the third day of menstruation. For some reason all follicles except one undergo atresia while the elected follicle continues to grow and, usually, about the mid-cycle, fifteenth or sixteenth day, it ruptures with extrusion of its ovum. In the wall of the maturing follicle the granulosa cells are activated to the production of the female sex hormone, estrogen. This hormone is secreted in ever increasing amounts until the mid-cycle when it reaches a peak coinciding with the rupture of the follicle.⁶ As the ruptured follicle comes under the influence of the luteinizing hormone of the anterior pituitary the theca cells are converted into the lutein cells of the corpus luteum. The corpus luteum continues to secrete some estrogen but, more important, it produces in large amounts the hormone, progesterin. Progesterin and estrogen are maintained at high levels during the life of the corpus luteum, which is normally about twelve days.

*Read before the annual meeting of the Medical Society of Virginia, at Roanoke, October 25-27, 1943.

On the twenty-sixth day of the normal cycle the corpus luteum enters upon a sudden and rapidly progressive stage of degeneration coincident with which there is naturally a sharp drop in the estrogen and progesterin levels. It is this sudden withdrawal of the ovarian hormones that normally provides the stimulus to the endometrium which is followed by menstruation.¹⁶ This concept, supported by vast experimental and clinical evidence, forms the basis for our present opinions regarding normal menstruation and dysfunctional bleeding. Not only can uterine bleeding be produced by sudden withdrawal of progesterin or estrogen or both, but, contrarily, menstruation may be delayed by the administration of either or both in sufficiently large dose. Thus, evidence for the estrogen-progesterin withdrawal theory as the cause of normal menstruation and as an explanation for many abnormal bleeding states rests firmly upon sound scientific investigation.

The Uterus.—The endometrium is the site of cyclic morphologic changes noted above. During the follicular phase of the cycle (first 14 days) the estrogen from the maturing follicle induces the growth or proliferative phase in the endometrium. From the stump of endometrial glands left from the previous menses a new endometrium is formed. It consists of straight, tubular glands buried in a fairly deep stroma, few blood vessels, and the stroma cells are star or spindle shape. At the mid-cycle (14th to 16th day) the endometrium comes under the stimulation of progesterin from the corpus luteum. The endometrial glands enter the secretory phase, first apparent under the microscope because of visible changes in the cells themselves and later by actual secretion into the gland lumen. Rapid growth during the "secretory phase" results in a piling up of the gland epithelium giving the typical fuzzy or saw-tooth appearance to the endometrium upon which the diagnosis of ovulation or failure to ovulate is based. At the same time, the stroma cells become enlarged, surrounded by edema, and take on a decidua-like appearance. Coincident with degeneration of the corpus luteum on the twenty-sixth day of the cycle the stroma and gland cells begin to shrink, the edema disappears, and there is a marked coiling and constriction of the spiral end-arteries. This constriction produces a local tissue anoxia with subsequent necrosis, rupture of the arteries, subepithelial hematoma, and menstruation.¹⁵

In the myometrium there are cyclic changes in the pattern of myometrial contractions which reflect the endocrine changes in the ovary and the endometrial changes already described. During the follicular phase (first 14 days) the contractions are frequent, occurring 2 to 3 per minute, low in amplitude and relatively hypertonic. During the corpus luteum phase (last 14 days) of the menstrual cycle the contractions are slow in rate, about 1 per minute, very high in amplitude, and atonic.⁷ Any factors, interfering with this normal contractility will affect the bleeding phase of the cycle. More attention is now being given to the myometrium as an important factor in the control of menstrual blood loss. Also, it can be shown that the use of oxytocics such as ergot or pituitrin is rational only in the ovulatory cycle because maximum myometrial response can be obtained only when the muscle is under corpus luteum influence.

DIAGNOSIS OF MENSTRUAL IRREGULARITY

The Calendar.—No diagnostic instrument is so valuable as the studiously kept calendar of bleeding dates. A special calendar for this purpose is supplied the patient on which she is instructed to encircle each bleeding day and above that day in the space provided to insert the number of pads used. The latter provides a crude but satisfactory means of estimating the blood loss. Other pertinent data such as breast changes, vaginal discharge, abdominal pain, and coitus are recorded. So important is the calendar in the diagnosis of menstrual disorders that it must be given first place.

Endometrial Biopsy.—Second only to the accurate history is a study of the endometrial biopsy. The diagnosis, classification, and treatment of abnormal uterine bleeding depends upon whether the bleeding is post-ovulatory or anovulatory in character. The findings of a proliferative endometrium on the first day of the bleeding episode indicates the failure to ovulate and promptly incriminates the pituitary-ovarian system. It suggests a serious defect in the endocrine system. On the other hand, a secretory endometrium on the first day of the bleeding episode indicates that ovulation has occurred and the cause for the abnormal bleeding must be sought within the uterus or its environment, local or systemic, or in some relatively unimportant deviation from normal in the physiology of the corpus luteum. The biopsy

is easily obtained in the office by means of the Novak or Randall curet, fixed in formalin, cut and stained with hematoxylin-eosin in the usual manner, and examined under the low power. In addition to the information as to whether or not the bleeding has followed ovulation, some knowledge as to the estrogen status of the patient is obtained. The atrophic endometrium suggests estrogen deficiency while marked hyperplasia with cystic dilatation of the glands makes the diagnosis of metropathia hemorrhagica, a common bleeding syndrome in which the endometrium is thought to be under constant and persistent bombardment with estrogen from numerous follicle cysts in the ovaries.

Pelvic Examination.—Obviously the pelvic structures must be examined manually and with speculum to rule out fibroids, polyps, malignancy of cervix or fundus, pelvic inflammatory disease, congenital anomalies, and pregnancy. Size of the uterus is important and particularly the relation of cervical length to fundal length. Where the cervical-fundal ratio is 1-1 or less a diagnosis of infantile uterus is made. Retroversions should be noted and the development and turgor of the vaginal rugae observed.

Basal Metabolism.—Graves pointed out many years ago that menorrhagia was often associated with hypothyroidism and hypomenorrhea with hyperthyroidism. Generally speaking, this is true, but by no means always. In menstrual disorders of any type in which the B.M.R. is abnormal it is the experience of all that dramatic cure can often be effected by correcting the thyroid disturbance. This may be explained on the basis of the effect of thyroid on the pituitary-ovarian system and its sensitizing effect upon the endometrium. In the presence of a normal B.M.R. thyroid may or may not be helpful. Novak feels that it has little value here; however, he agrees that its value in the treatment of dysfunctional bleeding associated with a low B.M.R. is beyond question. It is the practice of many to place all anovulatory bleeding cases on thyroid to the point of tolerance irrespective of the B.M.R. In bleeding cases in which ovulation occurs it may or may not be indicated.

The Scales.—Another valuable instrument is the scales. Wide variations from the normal in body weight is often associated with menstrual disorders. The amenorrhea so often associated with obesity can be corrected in many cases by weight reduction

alone. One theory advanced to explain the amenorrhea of obesity is that the fat soluble hormones, estrogen and progestin, are absorbed and rendered inert by the fat tissue as fast as the hormones are secreted from the ovaries. Parenthetically, it should be said that obesity itself is rarely the result of endocrine disturbance, but endocrine disturbance may and often does result from obesity.

General Examination.—Tuberculosis, rickets, the anemias, blood dyscrasias, and acute infectious diseases are the important systemic diseases affecting the menstrual cycle. Careful note should be made of height, breast changes with especial attention to areolar pigmentation, hirsutism and fat distribution.

Special Tests.—X-ray of the sella turcica is occasionally indicated. Bio-assay of the 24-hour urine and blood are complex laboratory procedures not yet available to the clinician. Study of the urine for pregnanediol and the androgens yields information of theoretical interest, which even the laboratory worker finds difficult to interpret. Glycogen stains of the vaginal epithelium by inverting a smear over an open bottle of Gram's iodine gives a rough index to the estrogen status since glycogen content of the epithelium roughly parallels the estrogen levels. Vaginal pH and the differential staining of the epithelium cells for keratinization are simple procedures but give little information not supplied by the endometrial biopsy already described.

CLASSIFICATION, DIAGNOSIS, AND TREATMENT OF DYSFUNCTIONAL UTERINE BLEEDING

I. OVULATORY CYCLES (secretory endometrium)

A. Disturbance of Interval (Fig. 1):

1. *Amenorrhea.*—Primary or secondary amenorrhea may occur even in the presence of a normal pituitary-ovarian cycle. It is a rare type of amenorrhea, but in the group now under observation there has been one patient, age 34, with 2 normal pregnancies who had never menstruated. Weekly examinations of the endometrium on this patient showed a normal proliferative phase, followed in 2 weeks by a normal secretory phase lasting 3 weeks, to be followed by a proliferative phase again. Monthly breast changes and other signs of impending menstruation were not followed by uterine bleeding.

This patient evidently has a normal endocrine cycle, but a defect in the vascular response of her endometrium prevents menstruation. Following hysterectomy or deep destruction of the endometrium at curettage, such a pituitary-ovarian cycle may occur in the absence of menstruation.⁸ No satisfactory treatment is known.

2. *Oligomenorrhea*.—Menstruation occurring every 35 to 90 days and normal or scanty in amount is so designated. It has been shown that normal menstruation begins about 48 hours after degeneration of the corpus luteum begins. If the corpus luteum fails to undergo degeneration at the normal time, the onset of menstruation will be delayed until such a time as the corpus luteum does degenerate and there is a withdrawal of estrogen and progesterin.

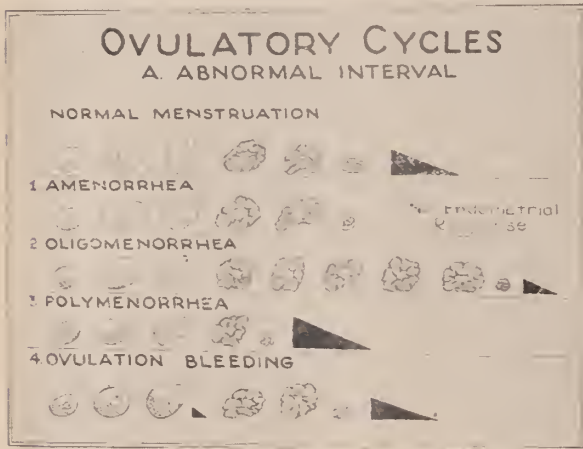


Fig. 1.

Indeed, it is possible experimentally to delay the onset of menstruation in the normal woman by giving large doses of progesterin.⁹ In one case the endometrial biopsy revealed a normal proliferative phase endometrium for two weeks following a menses and then a secretory endometrium at intervals over a period of 3 months until finally the patient's corpus luteum underwent spontaneous degeneration and menstruation occurred. Her fertility was not impaired, para. 3. In another case the patient had been menstruating regularly for 7 years and suddenly developed an amenorrhea which persisted for 16 months. Her endometrium was persistently secretory. A diagnosis of persistent corpus luteum was made, the patient was operated upon by this author, and a small corpus luteum was removed

from the right ovary. Menstruation began within 48 hours and has recurred cyclically since that time. Surgical removal of a persistent corpus luteum in a patient with oligomenorrhea, cycles of 35 to 90 days, is obviously not indicated. Explanation to the patient that her fertility is not impaired is the only treatment indicated. Where the oligomenorrhea extends into longer periods of a year or more, then the condition becomes one of secondary amenorrhea with persistent secretory endometrium and surgery may be indicated. Induction of uterine bleeding in the delayed menstruation of this type may often be accomplished by giving prostigmin, 1 ampoule daily for 3 days.

3. *Polymenorrhea*.—The patient who menstruates every 18 to 25 days on a fairly regular cycle is so designated. A secretory endometrium at the onset of bleeding indicates that she is ovulating. The short intervals between menses is usually due to premature degeneration of the corpus luteum. Just as persistence of function in a corpus luteum will delay menstruation until degeneration occurs, so a premature degeneration will bring about a premature menstruation.¹¹ A patient who gave a history of menstruating every 21 days was found by endometrial biopsy to have a normal proliferative phase (14 days) followed by a short secretory phase (7 days). This patient was treated by the administration of progesterone (10 mg.) daily from the 18th to the 26th days of her cycle, thereby carrying her progesterin level on after her own corpus luteum had failed. This delayed the onset of menstruation until the 28th day. Bleeding occurs about 48 hours after progesterone withdrawal.

4. *Ovulation Bleeding*.—When the patient presents a calendar showing that she menstruates bi-monthly, and especially if each alternate period is a scanty one, it may be assumed that she is probably menstruating regularly but has a superimposed bleeding phase at ovulation time. Endometrial biopsy at the scanty flow shows a proliferative phase, while at the time of greater flow it shows the secretory phase. This mid-cycle bleeding corresponds to the estrus bleeding of dogs and cows. Hartman¹² states that some bleeding at ovulation time is commonly found in the monkey, and Papanicolaou has found microscopic bleeding in many women at the mid-cycle corresponding to their ovulation time.¹³ Treatment is known nor is any indicated.

B. Disturbance in Amount (Fig. 2):

1. *Hypomenorrhea* (Scanty).—Cyclic, scanty bleeding from a secretory endometrium is a common complaint. The secretory endometrium indicates a normal or near normal pituitary-ovarian-endometrial

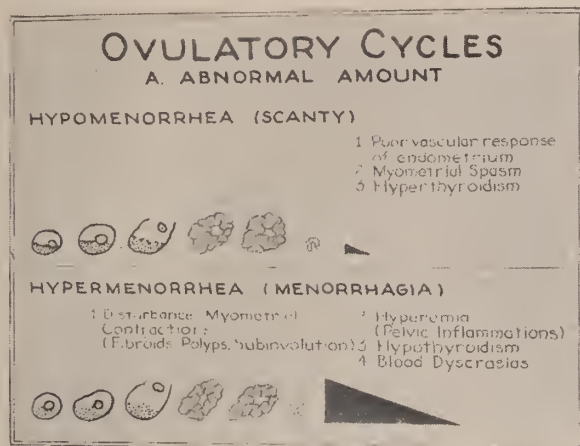


Fig. 2.

cycle. The scanty flow is thought to be the result of a defective vascular response in the endometrium associated with myometrial spasm. It has been shown by kymographic studies, using an intrauterine balloon, that scanty menstruation is often associated with myometrial spasm. Dysmenorrhea may and often is associated.¹⁷ Satisfactory treatment consists of a very hot bath at the onset of menstruation, prostigmin ampoule 1 for 3 days before menstruation begins, and a spasmolytic drug at the onset of menstruation. If the B.M.R. is high, as it may occasionally be in these cases of hypomenorrhea, then correction by iodine therapy is indicated.

2. *Hypermenorrhea* (Menorrhagia).—Profuse and long lasting menstruation, occurring at regular intervals in which the bleeding comes from a secretory endometrium, is classified as hypermenorrhea. One of every 4 patients who complain of menstrual disorders have "flooding" as their chief complaint. Hemorrhage of this type is rarely of endocrine origin. There are four chief causes: (a) Factors interfering with normal myometrial contractions such as fibroids, polyps, subinvolution, adenomyosis. (b) Hyperemia-pelvic inflammation, retroversions of the uterus. (c) Hypothyroidism. (d) Blood dyscrasias. Treatment is directed against the pathology. Fibroids and adenomyosis are treated surgically or

by irradiation. Chronic subinvolution often responds to ergonovine. Hyperemia secondary to pelvic inflammatory disease may be treated conservatively with diathermy and pessary for the retroversions. In the chronic unresponsive case surgery is indicated. Hypermenorrhea associated with a low B.M.R. responds dramatically to thyroid therapy. The leukemias, thrombocytopenic purpura, and vitamin K deficiency are rare causes.

II. ANOVULATORY CYCLE (Proliferative phase endometrium)

A. Disturbance of Interval and Amount (Fig. 3):

1. *Amenorrhea* (Primary).—This type is represented by the young girl who attains the age of 15 years and has not menstruated. History reveals no periodic breast symptoms, incomplete development of all secondary sex characteristics. She is often tall due to delayed epiphyseal closure which in turn is the result of estrogen failure. Breast development, hirsutism, and fat distribution are juvenile. The uterus is infantile, the cervical-fundal length having a ratio of 1 to 1 or less, and the endometrium is atrophic proliferative. Secondary amenorrhea of the same type may occur after repeated pregnancies, sepsis, prolonged lactation, and serious systemic diseases. It indicates in either case a serious pituitary-ovarian deficiency which must be treated

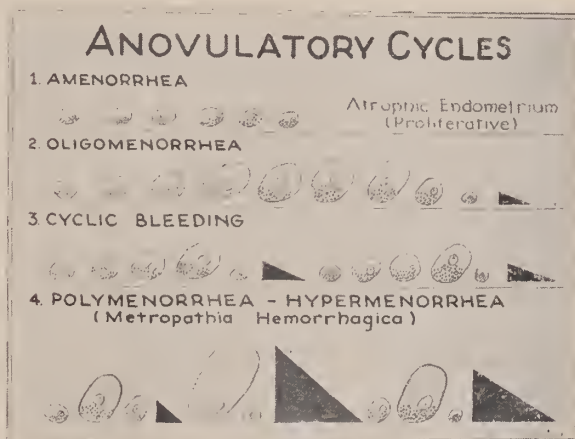


Fig. 3.

intensively if the reproductive capacity of the individual is to be salvaged and the endocrine health of the individual attained. Pathologically, the ovaries are small, almost senile in appearance. Treatment of the anovulatory amenorrheas consists

of general medical measures for improving the health, thyroid to tolerance, weight reduction where indicated, and progesterone according to the schedule described below. Willard Allen recently reported excellent results in the treatment of amenorrhea with progesterone. The treatment program used on my patients is stilbestrol (5.0 mg.) plus progesterone (10.0 mg.) daily for five days. Within 48 hours after completing this five day treatment bleeding occurs. This is the "estrogen-progesterone withdrawal bleeding". Since it is the estrogen-progestin withdrawal from the patient's own degenerating corpus luteum which provides the normal stimulus to menstruation in the ovulatory cycle, and since it is this withdrawal which provides the normal stimulus to the anterior pituitary to begin producing gonadotropin for the succeeding cycle, then it becomes apparent that this therapy stimulates the normal physiology. When one bleeding episode has been induced, then attempt should be made to produce permanent cyclic menstruation by repeating the 5 day treatment beginning on the 21st day after bleeding began. This will cause the treatment to fall on the 21st to 26th day of the cycle and, since bleeding usually follows 48 hours after cessation of treatment, then menstruation should begin about the 28th day. Again counting from the first day of this menstruation the stilbestrol-progesterone is again given on the 21st-26th day of the cycle. Three months of such therapy will often establish normal cyclic ovulatory menstruation.

2. *Oligomenorrhea*.—Menstruation every 35 to 90 days from a proliferative endometrium suggests a pituitary ovarian failure pathologically similar to the anovulatory amenorrhea just described but of not quite so severe a grade. It may be primary, due to delayed maturation of the pituitary-ovarian system, or secondary following repeated pregnancies, sepsis, or serious systemic disease. The ovaries contain small follicle cysts and the endometrium is persistently proliferative. This type of oligomenorrhea often reverts to an amenorrhea such as that referred to, or progresses into a syndrome of dysfunctional bleeding—discussed below. The irregular, intermittent bleeding is thought to be due to some growth of the ovarian follicles under a pituitary stimulation which is not sufficient to carry them on to maturation and rupture. The follicles intermittently undergo atresia with consequent estrogen

withdrawal and some uterine bleeding follows. The treatment for this type of oligomenorrhea is stilbestrol (5.0 mg.) plus progesterone (10.0 mg.) daily for 5 days on the 21st to 26th days counting from the beginning of the last bleeding episode. This is repeated for 3 months, after which normal cyclic, ovulatory menstruation may ensue.

3. *Cyclic Anovulatory Bleeding*.—Regular cyclic bleeding every 28 days, having the appearance of normal menstruation, may be anovulatory in type. These patients are usually diagnosed during the routine study for sterility, because, unless they seek medical advice for sterility, there would be nothing to suggest any defect in their cycle. The diagnosis depends upon finding a persistent proliferative phase endometrium at the onset of what appears to be a regular menstruation. Hamblen estimates that the normal woman may have 3 or 4 anovulatory menstrual cycles during a year. In the monkey anovulatory menstruation during the summer months is the rule, thus accounting for the seasonal sterility seen in this animal. The best means of inducing ovulation in the human is that already discussed, stilbestrol (5.0 mg.) plus progesterone (10.0 mg.) on the 21st to 26th days of the menstrual cycle. In the experience of this author it is possible to induce ovulation in 38 per cent of patients with anovulatory cyclic bleeding by this means. Thyroid to tolerance is used as in all types of anovulatory bleeding.

4. *Polymenorrhea and Hypermenorrhea* (Metromenorrhagia, Dysfunctional bleeding, Metropathia hemorrhagica).—This is the intermittent, acyclic, uterine hemorrhage seen most often in the adolescent and preclimacteric but may occur at any age. It is the most serious type of dysfunctional bleeding, often requiring hospitalization and transfusion. Like all anovulatory bleeding it is painless, dysmenorrhea never being seen except following ovulation. The examination of the patient reveals nothing striking. Secondary sex characteristics are normal and the B.M.R. is usually normal. On pelvic examination the ovaries are somewhat enlarged, polycystic, but rarely attain large size. The endometrial biopsy provides the key to diagnosis. The endometrium is hyperplastic, the glands are large and dilated, giving the microscopic tissue a "Swiss cheese" appearance. Stroma is reduced and the gland epithelium shows the persistent proliferative phase. Pathological examination of the ovaries

reveals many follicle cysts. Cause of the bleeding is thought to be the large amount of unopposed estrogen produced by these cysts which at irregular intervals is sharply reduced, as one or more of the follicle cysts undergo atresia with consequent estrogen withdrawal. Since there is no simultaneous withdrawal of progestin (no corpus luteum being present) such as occurs in normal menstruation, the usual stimulus to the anterior pituitary for the production of gonadotropin is absent. Thus the maturation of another follicle is long delayed, permitting the patient to remain long in the state of estrogen withdrawal with persistent bleeding. Ultimately another follicle is weakly stimulated by the pituitary to produce sufficient estrogen to again carry the patient beyond the bleeding level, but, since it never comes to maturity and rupture, it finally undergoes atresia and another long and profuse bleeding episode ensues. This is the theory held by many gynecologists today. It has much experimental evidence to support it but it is by no means proven.

Treatment consists of corrective medical measures with particular attention to the anemia. Thyroid is given to tolerance and weight reduction where indicated. Temporary control of bleeding can be accomplished by curettage but it is unphysiologic in that it does not strike at the underlying endocrine pathology, and it has therefore been abandoned by most. This author gives stilbestrol (5.0 mg.) daily at bed time for 20 nights. Bleeding will stop in the majority of cases within 4 or 5 days. On the last 5 days of stilbestrol therapy the patient is given progesterone (10.0 mg.) daily. When the stilbestrol-progesterone therapy is stopped on the 20th day, uterine bleeding will usually reoccur in 2 or 3 days. The patient is allowed to menstruate for 5 days and the stilbestrol-progesterone course of treatment is again given for 20 days. In other words, the patient is treated from the 5th to 25th day of her new cycle, stilbestrol being given on each of the 20 days and progesterone on the last 5 days of the stilbestrol therapy. Treatment is always discontinued on the 25th day of the cycle, permitting her to menstruate several days later. On the 5th day of this new cycle the treatment is again repeated. Three months of such therapy will establish normal, cyclic, ovulatory menstruation in a fair percentage of anovulatory bleeders, 34 per cent in this author's experience. Even, however, where ovulatory men-

struation is not induced, control of bleeding may be expected in the majority of cases. The routine is easy to remember if it is noted that the treatment is given for 20 days, stilbestrol (5.0 mg.) daily plus progesterone (10.0 mg.) on the last 5 days of the treatment course, giving the course of treatment on the 5th to 25th day after the cycle has been established. It is far superior to testosterone or radium in my hands.

SUMMARY

Diagnosis of menstrual irregularities depends upon: (a) Accurate history of bleeding dates with special reference to breast changes, menstrual moulimina, age of menarche, fertility, menstrual pain, weight changes and pelvic disease; (b) Endometrial biopsy on 1st day of a bleeding episode to determine the presence or absence of ovulation and degree of atrophy or hyperplasia; (c) Pelvic examination to rule out fibroids, subinvolution, pregnancy, inflammatory disease and neoplasms, measurement of cervical-fundal depth; (d) B.M.R.; (e) General physical examination, including study of the blood, the weight, and fat distribution; (f) Special diagnostic aids, such as x-ray of the sella turcica, bio-assay, glycogen stain of vaginal epithelium and vaginal pH are desirable but not essential to diagnosis.

All dysfunctional uterine bleeding should be classified for the purpose of treatment into 2 groups: Post-ovulatory bleeding and Anovulatory bleeding.

I. OVULATORY CYCLE (secretory endometrium)

A. Disturbance of Interval:

1. *Amenorrhea*.—Defect in vascular response of endometrium. No satisfactory treatment known.

2. *Oligomenorrhea* (35 to 90 day cycle).—Persistent corpus luteum. Treatment: Prostigmin ampoule 1 daily for 3 days.

3. *Polymenorrhea* (18 to 26 day cycle).—Premature degeneration of corpus luteum. Treatment: Progesterone (10.0 mg.) daily on 18th to 26th day of cycle.

4. *Ovulation Bleeding*.—Mid-cycle bleeding at the time of ovulation. Treatment: None indicated.

B. Disturbance in Amount:

1. *Hypomenorrhea (scanty)*.—Myometrial spasm or defect in vascular response. Treatment: Hot bath, spasmolytic drug and prostigmin ampoule 1 on first 3 days of menstruation.

2. *Hypermenorrhea (Menorrhagia)*.—Four major

etiologic factors: (a) Factors interfering with myometrial contractions (fibroids, polyps, subinvolution, adenomyosis); (b) Hyperemia (pelvic inflammatory disease, retroversion); (c) Hypothyroidism; (d) Blood dyscrasias. Treatment: Against the pathology found.

II. ANOVULATORY CYCLE (proliferative endometrium)

A. Disturbance of Interval and Amount:

1. *Amenorrhea*.—Primary pituitary-ovarian failure associated with delayed menarche or secondary following pregnancy, sepsis, hemorrhage, etc. Treatment: Stilbestrol (5.0 mg.) plus progesterone (10.0 mg.) daily for 5 days. Bleeding occurs in 48 hours. Repeat the 5 day treatment during succeeding 2 months on the 21st to 26th day of cycle.

2. *Oligomenorrhea*.—Incomplete maturation of ovarian follicles with delayed intermittent atresia. Treatment: Stilbestrol (5.0 mg.) plus progesterone (10.0 mg.) daily from the 21st to 26th day of cycle.

3. *Anovulatory Cyclic Bleeding*.—Maturation of ovarian follicles which fail to rupture with cyclic atresia. Treatment: Stilbestrol (5.0 mg.) plus progesterone (10.0 mg.) daily on the 21st to 26th day of cycle.

4. *Polymenorrhea* and *Hypermenorrhea* (Metromenorrhagia, Dysfunctional bleeding, Metropathia hemorrhagica).—Over development of ovarian follicles progressing to follicle cysts and excess estrogen production with sudden atresia and estrogen withdrawal, followed by excessive uterine bleeding from a cystic hyperplasia of the endometrium. Treatment: Stilbestrol (5.0 mg.) daily for 20 days plus progesterone (10.0 mg.) on the 16th through the 20th day of stilbestrol therapy. Stop 10 days and repeat the 20 day treatment on the 5th to 25th day of the two succeeding cycles.

* * * * *

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Medical Arts Building.

DISCUSSION

DR. F. O. PLUNKETT, Lynchburg: As to functional uterine bleeding, first, I would thank Dr. Bickers to give a definition of functional uterine bleeding. I have many times read and heard of the term, just as I have of essential hypertension. As to essential hypertension, even today, regardless of my bald head and the years behind me, I still do not know its cause, and, consequently, know nothing as to the treatment. After all, we can get nowhere in the treatment of any condition, whether it be functional or pathological, unless we can ascertain the cause and remove it. If we can do that, then we shall get results.

Uterine bleeding, other than the normal menses, to my mind is always a danger signal. If every doctor, whether he be an obstetrician, a gynecologist, a surgeon, a general practitioner, or even a chiropractor (whom we discussed so much this morning, and who are doing a lot of treating of uterine bleeding and producing a lot of uterine bleeding) or what not, would respect the same, there would not be half the number of cancers, large fibroids, chronic cervicitis, and so on and so forth that we encounter today. So, if you get what appears to be functional uterine bleeding, please keep uppermost in your mind always that it might be pathological bleeding. Don't let it linger, or it might be too late. Then, I believe, you will save many lives that you would otherwise lose—and prevent many cancers.

While off the subject *per se*, I will admit, yet being as ignorant on the real topic as I am, I could not pass the opportunity of mentioning pathological uterine bleeding. Yes, many die from uterine bleeding, certainly be-

cause of pathological uterine bleeding, and also a few from functional uterine bleeding. Only three weeks ago a young girl, fourteen years of age, was referred to me. She came into the hospital with a history of bleeding from eighteen to twenty-four days; and her menses—or rather the bleeding, whether you want to call it menses or not—lasted anywhere from six to twelve days. The doctor that brought her in told me that she had been bleeding for five days but that he did not think she had lost very much blood. Yet he told me that the early part of last summer he did a hemoglobin on her and it was only twenty-one per cent. I shrugged my shoulders and did not believe it. When I went in to see the girl, however, she was in profound shock; she was pulseless, and she was not only pale but was cyanotic. We sent to the blood-plasma bank and got some blood plasma and gave it to her. It was then early afternoon. As soon as we could get her matched up, we gave her blood in addition.

After hearing Dr. Bickers' paper I think I can do better for these girls. I think it is one of the most practical discussions I have ever heard or read. I hope he will send us reprints and that we shall apply the methods that he has given us. If so, our results in these functional uterine cases will be something that we can be proud of—provided we can obtain his results.

DR. R. E. FEAGANS, Fairfax: I should like to ask Dr. Bickers whether there is any difference in the effects derived from the use of stilbestrol when given by mouth from its effects when given hypodermically.

DR. EUGENE L. LOWENBERG, Norfolk: I have always learned a great deal from the papers of Dr. Bickers and once again find his paper very valuable.

It is not clear to me how the action of stilbestrol and progesterone cause ovulation. I thought their effect was on the uterus. I can understand how one might produce

a secretory endometrium by their use. I should like to ask Dr. Bickers to explain that. By what mechanism does it act on both?

DR. BICKERS, closing the discussion: May I thank those who discussed this paper? Dr. Plunkett made an important point relative to the organic origin of uterine bleeding in contrast to the purely functional bleeding described in this paper. It is true that the most common cause of abnormal uterine bleeding is to be found in organic lesions. The differentiation of bleeding cases into the organic or functional type is all important. The routine use of the endometrial biopsy will not only aid in the diagnosis and treatment of functional bleeding but will at the same time rule out carcinoma, endometrial polyp, retained placental fragments, etc.

Stilbestrol is a potent estrogen-like substance. It is now agreed that its physiologic effects are practically identical with those of the natural hormone. It is so readily absorbed by mouth that hypodermic administration is not necessary. The incidence of nausea is the same regardless of the route of administration because its nausea producing quality is not local in action but central.

Dr. Lowenberg raises the question of the induction of ovulation. It is my opinion that the most satisfactory means of inducing ovulation is to simulate by treatment the normal stimuli to Graafian follicle maturation. In the normal woman this stimulation is produced by the sudden withdrawal of estrogen-progesterone from the involuting corpus luteum. By giving large doses of these hormones on the 21st to 25th day of the menstrual cycle and then suddenly stopping them, this withdrawal stimulation of nature is approximated by therapy. Not only does menstruation follow the estrogen-progesterone withdrawal, but likewise a potent stimulus to the anterior pituitary occurs. The gonadotropic hormones, chorionic or serum in origin, are without effect in the human.

Army Death Rate From Disease Low.

Brig. Gen. James S. Simmons, chief of Preventive Medicine, U.S.A., speaking as guest of the Schenley Laboratories in a nationwide broadcast recently, stated that the disease death rate among American soldiers of World War II is the lowest ever recorded for the U. S. Army and only one-twentieth as high as that of World War I. He said there had been no great epidemics among American soldiers in this war despite the fact that they have been exposed to every known disease under difficult field conditions and have experienced every kind of weather and climate.

"Iconography of Vitamin Deficiencies".

Six unretouched colored photographs to aid physicians diagnose vitamin deficiencies are included in the second series of "Iconography of Vitamin Deficiencies" issued to the medical profession by the Winthrop Chemical Company, Inc. The pictures reveal the generalized erythema of the tongue and other indications of chronic pellagra; the red smooth tongue (atrophy of the papillae) with considerable edema and the generalized reddening of the skin with isolated areas of intense erythema particularly noticeable on the knuckles of acute pellagra.

NAUSEA AND VOMITING OF PREGNANCY TREATED WITH L-HISTIDINE MONOHYDROCHLORIDE—PRELIMINARY REPORT

A. J. Russo, M.D.,
Salem, Virginia.

The use of l-histidine monohydrochloride in the treatment of peptic ulcers is well known, some investigators claiming good results and others, fortified with some clinical examples, are not so enthusiastic about its use. The chief clinical obstacle about the certainty of improvement or "cure" in ulcer patients, in the great majority of cases, is the difficulty of evaluating the nervous element which plays an important part in its cause. While this unknown quantity of nervous element is also present to some extent in obstetric patients, its fairly consistent onset in pregnancy cases is strongly suggestive, if not positive proof, that nausea and vomiting in pregnancy, are due to some definite physiological upset. Doubt is always present in cases that have not had complete laboratory work-up in general practice, as to whether they would have gotten well anyway. That remains for other investigators with more time and laboratory procedure at their disposal, to dispel or encourage the findings initiated by the hunch of a general practitioner. Since nausea and vomiting are often two of the concomitant symptoms of ulcer (peptic) patients, and since they are also symptoms of pregnancy, it became logical to attempt a therapeutic trial of the l-histidine monohydrochloride, for the relief of nausea and vomiting associated with pregnancy.

The report of the following five cases is given to present another drug to the growing list of pharmacologicals used in obstetric practice.

Case 1. D. F., multipara, age 25, nausea and vomiting for seven months. Blood pressure and urine normal. 5 cc. l-histidine monohydrochloride given intramuscularly in gluteal region once daily for four days. Result: Complete relief from nausea and vomiting.

Case 2. M. P., multipara, age 28. Nausea and vomiting three or four times daily for one month. Blood pressure and urine analyses normal. Treatment: 5 cc. l-histidine monohydrochloride given in gluteal muscle on three consecutive days . . . a total

of 15 cc. Result: Complete relief from nausea and vomiting.

Case 3. G. E., primipara, age 22. Nausea and vomiting for three weeks, several times daily. Patient "looked" very sick. Blood pressure and urine normal. Treatment: 5 cc. l-histidine monohydrochloride given daily in the gluteus muscle for four doses. Result: Complete relief from nausea and vomiting.

Case 4. E. W., primipara, age 18. Nausea and vomiting for three weeks. Blood pressure and urine normal. Treatment: 5 cc. l-histidine monohydrochloride every two days. Four doses given. Result: Complete relief, but much slower.

Case 5. C. A., primipara, age 16. Nausea and vomiting for two weeks. Blood pressure and urine normal. Treatment: 5 cc. l-histidine monohydrochloride in the gluteus muscle daily for two days. Result: Complete relief.

CONCLUSION

Five cases have been presented with varying severity of nausea and vomiting of pregnancy. While complete relief was obtained in all five cases, it is not to be presumed that the drug is that perfect. Where there is recurrence, one or two more injections will suffice to relieve the nausea and vomiting. If it helps in most of the cases, one could not ask more. As for its use in the abnormal cases, that still remains to be seen. It is hoped that other trials may be given the drug, not only in normal and abnormal obstetric patients, but in nausea and vomiting from whatever cause. If I were to hazard a guess as to how the drug works, I would say it reverts the abnormally congested stomach mucosa to normality.

The brand of l-histidine monohydrochloride used in the above cases was a 4 per cent sterile aqueous solution of Hoffman-LaRoche—known as Larostidin, although any other brand of l-histidine monohydrochloride could be used.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE,
MEDICAL SOCIETY OF VIRGINIA

The patient, a 33 year old white primigravida, was first seen by a physician because of painless vaginal bleeding complicating pregnancy near term. She had bled a small amount for two days and was bleeding freely when the physician arrived. Immediate hospitalization was obtained. The bleeding stopped and she left the hospital a few hours after admission, planning to return to her home out-of-state.

A few hours later, bleeding recurred and she was re-admitted to the hospital, bleeding moderately and having mild labor pains. Labor was induced with repeated small doses of pituitrin. After five hours of active labor, complicated by irregular vaginal bleeding, she was taken to the delivery room. A progress note at that time stated that the patient was cyanotic, comatose, weak, respirations labored, and had apparent air hunger. Improvement followed administration of oxygen, adrenalin, digifoline, and caffeine. Thirty minutes later, she was delivered with forceps, under chloroform anesthesia, of a living child weighing 6 lbs. 15 ozs.

The placenta was delivered fifteen minutes after the baby. Pituitrin, ergotrate, and glucose were given. The uterus was packed with gauze and bleeding continued through the pack. Attempts to give plasma and blood were unsuccessful. Death occurred four hours after delivery.

COMMENT

This case has been classified as a preventable obstetrical death. Lack of prenatal care was due to the patient's ignorance or neglect. Although medical care was secured after complications had developed, it is very likely that obstetrical care would have saved both mother and baby.

There was no record of any attempt to diagnose the extent of the placenta praevia, to determine the condition of the cervix, or to rule out the presence of cephalo-pelvic disproportion, all of which are essential in deciding upon the proper management of such a case.

Any bleeding during the last trimester of pregnancy is abnormal and should be investigated. Such a case should be hospitalized for diagnosis by sterile vaginal examination. X-ray, soft tissue technic, is helpful in some cases. Suitable donors should be

obtained as soon after admission as possible, *before the vaginal examination is done*. Rectal examinations in such cases frequently start bleeding and should never be done during the last trimester until possibility of placenta praevia has been ruled out.

In doing a sterile vaginal examination to determine the cause for vaginal bleeding late in pregnancy, one should be careful not to enter the cervical canal until the possibility of placenta praevia has been eliminated. If placenta praevia is present, a spongy consistency to the lower segment is frequently found upon gentle palpation over the placental site. In many cases, the presenting part can be palpated through the thin lower segment over the area that isn't covered by placenta, thus enabling the examiner to estimate the extent of the praevia. The condition of the cervix can be ascertained without actually entering the cervical canal and inviting further bleeding.

If the placenta praevia is thought to be central or extensive lateral in type. Caesarean section for delivery, followed by transfusion, will afford both mother and baby the best chance for survival. If the praevia is marginal in type, or lateral that is not extensive, the membranes may be ruptured artificially on the side away from the placenta, provided the cervix is soft, partially effaced and at least 2 centimeters dilated, and there is no cephalo-pelvic disproportion. This will frequently start labor and permit the presenting part to tamponade the placental site and prevent further bleeding. A tight scultetus abdominal binder will help hold the presenting part down against the lower segment. If excessive bleeding continues after such procedures, caesarean section may be necessary.

In this case there was unnecessary, and obviously fatal, delay in controlling hemorrhage after delivery. The mother would have had a much better chance for survival if the uterus and vagina had been packed tightly (from the fundus to the vulva) soon after the expulsion of the placenta, when profuse bleeding was noted, before taking the patient to her room, and the blood loss replaced *promptly* with whole blood or plasma. The blood and plasma should have been obtained soon after the patient's admission to the hospital. In this case, there is no doubt that she had "too little too late".

PUBLIC HEALTH

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for August, 1944, as compared with the same month in 1943, and for the period of January through August, 1944, compared with the same period in 1943, follows:

	Aug.		Jan.-	
	1944	1943	Aug. 1944	Jan.- 1943
Typhoid and Paratyphoid Fever...	14	31	82	134
Diarrhea and Dysentery.....	925	1,270	4,044	3,895
Measles	39	134	17,006	9,319
Scarlet Fever	62	50	1,989	1,139
Diphtheria	32	22	155	203
Poliomyelitis	225	10	364	31
Meningitis	14	29	439	721
Undulant Fever	4	3	32	26
Rocky Mountain Spotted Fever...	23	14	65	42
Tularemia	3	4	36	34

THE DECLINE OF APPENDICITIS MORTALITY IN VIRGINIA

The reduction in mortality from appendicitis during the past twenty years has been outstanding. The number of deaths from this cause in Virginia has been cut almost in half during the period—from 239 deaths in 1924 to 134 for the past year. The greater part of this reduction, however, has come about in the past seven years. For the period 1924 to 1937, a slight reduction only was noted, from a rate of 10.1 per 100,000 population to 8.5. Following the year 1937, the decline was accelerated until in 1943 a new low rate of 4.7 was established.

Appendicitis mortality among colored persons is higher than among white. In the past year in the State, the colored rate (7.6) per 100,000 population was exactly twice the white rate of 3.8. Although substantial reductions have been made for this cause among the colored race during the past two decades, improvement has been less pronounced than in the white. The colored rate (10.8) in 1924 fell to 7.6 in 1943, a decline of 30 per cent. The white rate decreased from 9.9 in 1924 to 3.8 in 1943, a reduction of 62 per cent.

Among males the death rate from appendicitis is

larger than among females. Last year in Virginia there were 82 male deaths, with a rate of 5.7 per 100,000, and 52 female deaths, with a rate of 3.7.

All ages are represented in mortality from this cause, although maximum rates are found past 45 years of age. In 1943 the death rate in the State for the age span 45 years and over was 8.4 per 100,000 population. The age period 20 to 44 years was next in order, with a rate of 4.0. Among young children and adolescents smaller rates were noted, as follows: under five years, a rate of 3.8; five to nine years, 2.2; and ten to nineteen years, 3.4. A feature of particular interest is the steep downward trend of mortality *among children and young adults* during the past two decades. The greatest gains against this disease have been between the ages of 5 and 44 years. Death rates for this age span showed a reduction of 58 per cent during the period. The decline among older persons was less marked—a 36 per cent decrease. For children under 5 years there was an actual rise in death rate from 2.1 for the year 1924 to 4.9 for the year 1937. However, between the years 1937 and 1943 (the period of significant decline among all ages) there was a 22 per cent reduction for this age group, with a rate, in 1943, of 3.8.

Undoubtedly, the rate decrease in deaths from appendicitis among adolescents and adults represents a real improvement in mortality. The less spectacular decline among very young children may be due, in large part to more accurate diagnosis at the present time, as intestinal disturbances so frequent among this age group may have formerly obscured the diagnosis of appendicitis. The intensive educational campaign to inform the public of the danger of delay in seeking medical advice, and to warn against the use of laxatives for abdominal pain have brought about a large reduction in the number of complicated cases with resultant lowered mortality. Among other notable factors contributing to this decline are early diagnosis, increased hospital facilities, and improved surgical techniques.

REPORTS FOR 1944 ANNUAL SESSION

MEDICAL SOCIETY OF VIRGINIA

Council

The regular meeting of the Council was held January 27, 1944, minutes for which appear on pages 162 and 163 of the March MONTHLY. On account of transportation difficulties, the President handled several matters with the councilors by correspondence.

Executive Secretary-Treasurer

TO MEMBERS OF THE HOUSE OF DELEGATES:

The membership of the Society is at its highest peak, there being 1,968 members on the roll as of September 15, 1944. This is an increase of 36 over the number reported at the last annual meeting. Membership statement for the year is:

New members -----	81
Reinstatement -----	1
	82
Lost by death -----	36
Resignation -----	3
Dropped as lost or for non-payment of dues -----	7
	46
Total increase in members -----	36

Twenty per cent of the membership are listed as serving or having served in the armed forces during the present war. This does not include a large number of doctors who entered the services directly from internship in the State or other non-members.

There is no change in the number of component societies—48 representing 91 counties and one city—though some of the smaller societies report being inactive as so few doctors are left in their localities.

The financial condition of the Society is good. The books will be audited at the end of the financial year (September 30) and a report presented to the Council at its October meeting. This will be made a part of the minutes of the Society.

Upon instruction of the Council, twenty-three Series F War Bonds have been bought during the year and these have been placed in the Society's deposit box in the First and Merchants National Bank, Richmond.

In addition to the general duties of the office, there seems to have been an increase in the amount of correspondence which it is hoped means a greater interest in things medical as well as the Society.

The Secretary expresses appreciation to officers, committees and individual members for the cooperation they have given at all times.

AGNES V. EDWARDS.

Delegates to the American Medical Association

The House of Delegates of the American Medical Association met in Chicago, June 12 to 15, 1944. At the opening session on the morning of June 12, addresses were given by the Speaker, the President, and the President-Elect. President Paullin outlined very clearly and forcefully the salient problems to be considered by the

House and his address published in the *Journal* of June 24, 1944, merits careful perusal.

By reason of its urgency the question of the supply of medical students was given immediate consideration. It was pointed out that recent action of the Army and Navy and the Selective Service System will so curtail the flow of students into medical schools that the entering classes of 1945 will be reduced 25 to 30 per cent. The serious effect on medical care that will result from these policies had been brought to the attention of the head of the Selective Service System, the Secretaries of War and the Navy, and the President; but all suggestions for relief had been rejected. These authorities held that the need for medical care is subordinate to the need for manpower in the fighting forces. On the recommendation of the Council on Medical Education and Hospitals, the House adopted the following resolution:

"WHEREAS, the present policy of the Army and the Selective Service System in preventing the enrollment of a sufficient number of qualified medical students will inevitably result in an over-all shortage of qualified physicians, with imminent danger to the health and well-being of our citizens; therefore, be it

"RESOLVED, That it is imperative that immediate action be taken by the President or the Congress of the United States to correct the current drastic regulations, which result in a restriction of the number of students qualified to enter the courses of medical instruction in approved Medical Schools."

This resolution was sent to the President, the Secretaries of War and the Navy, and all members of the House and Senate Military Committees.

It will be recalled that at the session of June, 1943, there was established a Council on Medical Service and Public Relations. The report of this body covered a tremendous amount of work and indicated that much had been accomplished. Studies had been made of pending legislation in Washington and semimonthly bulletins sent to members of the House of Delegates and to officers of component societies. Particular study was given to the subject of voluntary insurance and other plans for pre-paid medical care. An office was opened in Washington as of April 3, 1944, for the collection of information and data concerning medical care and its distribution, its availability, its costs and its control in various parts of the United States. This information is to be made available to members of the medical profession and to other proper agencies interested in the extension or improvement of medical care. The Council recommended that the American Medical Association take a more active part in encouraging voluntary insurance against the cost of hospital and medical care and that the Council be authorized to employ a director of prepayment insurance with such assistants as may be necessary. These recommendations were later adopted.

A resolution was introduced by the California State Medical Association that the Secretary of the A.M.A. be relegated to the office of Secretary Emeritus for life and that the Editor of the *Journal* be replaced. A somewhat similar resolution from the Idaho State Medical Association sought to limit the activities of the Editor of the *Journal* to the editorship of the *Journal*. These resolutions, particularly with regard to the Editor of the *Journal*, were warmly discussed but finally rejected by a large majority. In recommending the rejection of these resolutions the Reference Committee on Executive Session made a strong plea for unity within the Association and for loyalty to the Board of Trustees and to the representatives selected by the Board.

A resolution on the shortage of trained nurses called attention to this shortage and to the fact that in many communities it is felt that training requirements are too high for ordinary needs, this, in fact, accounting for current difficulties. This resolution was referred to the Committee on Medical Education, which recommended that the Council on Medical Education and Hospitals confer with the various nursing organizations concerning the present situation with a view toward its amelioration.

For 1944, the Distinguished Service Award went to Dr. George Dock, octogenarian, famous as a physician and teacher.

At the final session Dr. Roger I. Lee of Boston was unanimously elected President. For many years a delegate and for ten years a trustee and more recently Chairman of that body, Dr. Lee's superb qualities of mind and heart have commanded the admiration and respect of his colleagues and have endeared him to all who have come in contact with him. Dr. Stanley J. Seegar of Texas was elected Vice-President and Dr. Louis H. Bauer of New York as Trustee for a term of five years.

Atlantic City was chosen for the Session of 1947, at which time the one hundredth anniversary of the American Medical Association will be celebrated.

WALTER B. MARTIN

J. MORRISON HUTCHESON

Delegates.

Publication and Program

Your Committee on Publication and Program has the honor to report that the MONTHLY has carried on in a satisfactory manner. In January a change was made in the cover, which, from all reports, has met with general approval. Contrary to expectations there has been no dearth of material.

The program speaks for the other activity of your Committee.

M. PIERCE RUCKER, *Chairman*

WYNDHAM B. BLANTON

J. EDWIN WOOD, JR.

Scientific Exhibits

TO THE PRESIDENT AND HOUSE OF DELEGATES:

For a while it looked as if we would have very few exhibitors this year. However, since the first of Septem-

ber, several have notified us of their intentions to take part in the Scientific Exhibits. At present the number to exhibit totals twelve, and we hope to receive a few more.

We earnestly ask that you lend moral support to the exhibitors by visiting the displays, and, when possible, by talking with the exhibitors.

W. AMBROSE MCGEE, *Chairman*

MCLEMORE BIRDSONG

M. L. DREYFUSS

Department of Clinical and Medical Education

Shortly after the beginning of the war it was decided that no major undertakings would be attempted unless war demands made them seem urgent and feasible. Accordingly, during the past year attention has been directed to planning for post-war work rather than undertaking the usual types of activities.

Tentative plans, as previously reported in last year's annual report, have been made to carry on a postgraduate program in Cancer Control at the request of the Virginia Cancer Foundation. As soon as war conditions permit steps will be taken to begin this work.

During the summer tentative plans have been made to conduct an Institute in Industrial Medicine in several centers located in central and northern Virginia. The component societies in Lynchburg, Roanoke, Augusta County, and Harrisonburg have been approached on the subject and favor such a program in the late fall or early spring. When plans are completed another center will be added so that a five-day circuit may be arranged. Speakers will be obtained from the United States Public Health Service and agencies engaged in the practice of Industrial Medicine. This program will be undertaken at the request of the Committee on Industrial Health of which Dr. Fred J. Wampler is chairman.

Dr. Ray Kimbrough, Chairman of the Nutrition Committee of the Medical Society of Virginia, has requested that a postgraduate course dealing with Nutrition be offered to doctors in the state in the near future. A conference was held between Dr. Kimbrough, Dr. W. T. Sanger, and the Executive Secretary in June for the purpose of making tentative plans for this course. It is expected that plans will be completed soon so that this course can be started in the late fall.

As in the past Prenatal Examination Record Cards have been supplied this year to doctors writing for them. This practice was begun about ten years ago when the postgraduate course in Prenatal and Postnatal Care was begun. A large supply of record cards was printed and it was announced that these would be supplied to doctors requesting them as long as the supply lasted. After supplying requests for 900 cards this year the supply is now exhausted. Consideration will soon be given to the matter of revision of the old card and printing a new supply.

At the annual meeting of the Medical Society of Virginia in October, 1943, the sum of \$600 was appropriated to carry on the work of the Department of Clinical and Medical Education. In view of the limited activities during the year none of this amount was requested of the

Treasurer. Several small items to cover postage and telegrams, amounting to less than five dollars, will cover expenses for the year.

In view of the plans being made for assistance to the Committee on Industrial Health and the Committee on Nutrition for postgraduate courses to be conducted during the coming year it is requested that the Medical Society of Virginia appropriate the sum of \$600 for the use of the Department of Clinical and Medical Education in conducting these and any other courses for which a demand may develop.

GEORGE B. ZEHMER,
Executive Secretary

Legislation

Shortly after this Committee was appointed the Commission created under House Joint Resolution No. 22 of the General Assembly of 1942 to study and report on matters pertaining to the right to practice the healing art in Virginia filed its report with the members of the General Assembly. In order to carry out its recommendations the Commission prepared four separate bills for introduction at the 1944 session, these providing for (1) a so-called basic science examining board of two chiropractors, one naturopath and two teachers in medical schools, to examine applicants in the chiropractic and naturopathic branches, (2) a chiropractic examining board of three members, (3) a naturopathic examining board of three members, and (4) injunctive relief after criminal conviction of the unlawful practice of any branch of the healing art. The bills further provided for admission to licensed practice without examination of practically all chiropractors and naturopaths then practicing in the State of Virginia.

It soon became apparent that the report of the Commission and its proposed bills would have the unanimous approval and support of the large number of unlicensed healers who have been clamoring for admission to practice for many years, and that because of this report this group might develop sufficient strength to obtain a full "grandfather clause" from the General Assembly and separate examining boards for future applicants. This made it imperative that our Committee develop and sponsor in the General Assembly a positive program as a substitute for that presented by the Commission. This could only be done by revising the Medical Practice Act to give these groups representation on the Medical Examining Board, with the right to have their graduates take an examination given by the Board to determine competency.

With the co-operation and assistance of Drs. F. H. Smith and J. W. Preston of the Board of Medical Examiners a complete revision of the medical statutes was made by counsel for the Society, this revision becoming House Bill 29 when it was presented to the General Assembly of 1944 by its patrons, Mr. L. Preston Collins of Marion and Dr. E. W. Dodd of Buchanan. The four bills prepared by the Legislative Commission were introduced on the opening day of the 1944 session by Mr. Stuart B.

Campbell of Wytheville and Mr. John B. Boatwright of Buckingham, and all of these bills were then referred to the Committee on General Laws of the House of Delegates for consideration and report.

House Bill 29 divided the examination given applicants for licenses to practice into two parts, the first or Part I being a basic science examination given by the medical members of the board to all applicants irrespective of their school of practice, and the second or Part II being an examination on subjects peculiar to the school of the applicant and given by his representatives on the board. No one could take Part II without having passed Part I. A chiropractor and a naturopath were added to the board to give the examinations in these branches. The provisions of the former statutes which were alleged to have prevented any chiropractic or naturopathic candidate from qualifying for the examination were relaxed to some extent, and diplomas of certain of their schools were recognized. The basic science examination was relied upon to eliminate incompetent candidates, this method having proved highly effective for such purpose in a large number of states. No special provision was made for those now practicing illegally, but they would be permitted to take the regular examinations. The practice of medicine and of the several branches of the healing arts were defined in the bill, and practice beyond the scope of the practitioner's license prohibited.

A full hearing on the five medical bills was had on February 7 before a joint meeting of the Committees on General Laws for the House and Senate, Drs. Edwin P. Lehman, H. B. Mulholland, J. P. Gray, E. W. Dodd, Felix Swope, I. C. Riggin, and J. Morrison Hutcheson, and Dr. Dabney S. Lancaster and others, presenting the case for the medical profession, and Mr. Stuart B. Campbell leading the fight for the sectarians. Shortly thereafter the whole matter was referred to a subcommittee of three of the House Committee on General Laws for study and report, these three being Messrs. Cassell of Portsmouth, Randolph of Albemarle and Massie of Richmond City. This sub-committee considered the various bills and numerous amendments presented by interested parties, and finally recommended to the full Committee that the four bills sponsored by the Campbell Commission be passed by indefinitely and that House Bill 29 be reported out with a number of amendments. These recommendations were adopted by the Committee and the bill was reported to the House of Delegates for consideration.

The principal changes made in House Bill 29 by the Committee were in connection with the chiropractors and naturopaths. The definition of the term "practice of chiropractic" was changed by inserting the dubious clause "and assisting nature for the purpose of normalizing the transmission of nerve energy", and by providing that such practice does not include the use of surgery, obstetrics, osteopathy, nor the administration or prescribing of drugs, medicines, serums and vaccines. An additional chiropractor was placed upon the Examining Board, and the basic science examination required to be given by the full board rather than by the medical members only.

Provisional five-year licenses were given sectarians already practicing, with the right during such five-year period to take the regular examinations (or in lieu of Part I of the regular examination to take an examination on five basic science subjects given by a special board of three members appointed by the Governor from the faculties of the accredited colleges and universities in the State), and thus obtain a permanent license to practice. The right to use the injunctive process was limited to cases in which a conviction had already been obtained in a criminal court.

While the amendments were not entirely satisfactory to your Committee, the bill with the amendments was so superior to the legislation proposed by the Campbell Commission that we finally determined to give it our full support and to make every effort to have it passed by the General Assembly without further change. On the other hand, the sectarians started a quick campaign for a further amendment adding a "grandfather clause" which would license without examination most of those now practicing in Virginia and it was on this last amendment that the issue was drawn in the hearing before the House of Delegates.

The fight before the House for House Bill 29 was led by Mr. Collins and Mr. Dodd, and Mr. Campbell led the opposition. Many speakers participated and the hearing took up the greater part of a day. The first test of strength came on the Campbell amendment, which was decisively defeated by an unrecorded vote. With this amendment out of the way the Committee amendments were adopted without change and without any recorded opposition, and the bill was then quickly passed by the House of Delegates. Some opposition threatened to develop in the Senate, but this was successfully sidetracked, and the bill was finally passed by a unanimous vote and was later signed by the Governor and became the new Medical Practice Act. At the request of our Committee a synopsis of the Act, giving particular attention to the changes made in the previous law, was prepared by counsel for the Society, and this was published in the April issue of the VIRGINIA MEDICAL MONTHLY. Because of that publication it seems unnecessary to lengthen this report with a statement of the changes that have been made in the statutes regulating the practice in our State.

Your Committee cannot be sure that the old problem of the unlicensed chiropractors and naturopaths is solved, but at least a long step has been taken toward a solution. This group went before the General Assembly of 1944 fortified with the highly favorable report of the Campbell Commission, and under the able leadership of Mr. Stuart Campbell undoubtedly developed greater strength than it can ever obtain again. An opportunity to be licensed upon examinations given by an impartial board, with a passing grade of fifty per cent, has been afforded these practitioners, and to decline to take this examination will be a confession of weakness that will be very damaging before any future session of the General Assembly. Furthermore, inability to pass this examination will stamp

the applicant as wholly incompetent to practice any branch of medicine.

On July 1, 1944, the present members of the Medical Examining Board were all reappointed by the Governor, but under the new legislative policy with respect to State examining boards these members (with the exception of the Secretary) can serve only for the term for which they were reappointed. Terms are for from one to five years each. The chiropractic members of the Board are Robert C. Bowie of Galax and Arthur R. Hosking of Danville, and the naturopaths will be represented by H. E. McKinney of Richmond.

For nearly two years prior to the meeting of the General Assembly a special committee of the Society with Dr. Wyndham B. Blanton as Chairman studied the question of the possible substitution of a medical examiner system in Virginia for the present system under which investigations of deaths occurring under unusual or suspicious circumstances are made by local coroners, and prepared for presentation to the Assembly a bill which if enacted would make its recommendations effective. Because it seemed probable that active support of this bill by the Society would prove detrimental to the success of House Bill 29, it was deemed best that all action on this problem be deferred, and for this reason the bill was not presented to the General Assembly. We are very grateful to Dr. Blanton and his Committee for postponing consideration of their proposed legislation until a more favorable time, and feel sure that the movement they have started will yet result in the establishment in Virginia of an efficient medical examiner system.

To express the appreciation of your Committee for the assistance rendered us by physicians all over Virginia would be an endless task. Our appeals for immediate action on several occasions when the success of our program was in the balance brought a whole-hearted response that made a splendid impression on your representatives in the General Assembly. For this we are grateful. Honorable L. Preston Collins of Marion and Dr. E. W. Dodd of Buchanan served as joint patrons of House Bill 29, and without their untiring efforts it is doubtful if this bill would have become law. The actual management of our legislative program was largely in the hands of Drs. J. Morrison Hutcheson, Dean B. Cole, Frank S. Johns and W. Lowndes Peple of Richmond as a sub-committee of the Committee on Legislation, and they spared no efforts in making this program a success. In matters dealing with the amendment of the Medical Practice Act Drs. J. W. Preston of Roanoke and F. H. Smith of Abingdon rendered invaluable service. To all who have joined with us in our efforts to maintain high medical standards your Committee is deeply grateful.

W. C. CAUDILL, *Chairman*

Medical Economics

Nothing has been brought to the attention of this Committee for consideration, so there is no report.

W. L. POWELL, *Chairman*

Ethics

No matter having been brought to its attention, this Committee has no report.

T. K. McKEE, *Chairman*

Judicial

This Committee has no report to make.

P. S. SMITH, *Chairman*

Membership

During the year, the Secretary has referred to the Committee two applications for membership—that of a doctor in the Navy, temporarily stationed in Virginia, and of another doctor residing in a county in which there is no component society. Both of these were acted upon favorably.

Notices of deaths of members, as far as they could be obtained, have appeared in the MONTHLY and will be presented in open session at this meeting.

The Committee takes this occasion to commend Dr. Bowyer upon his work as President during the past year and recommends that he be elected an honorary member of this Society.

J. BOLLING JONES, *Chairman*

D. M. KIPPS

A. M. SHOWALTER

Public Relations and Medical Service

The Committee on Public Relations and Medical Service has had three meetings within the past year. All these meetings have been attended by the full membership.

The primary meeting was initiated by a request from Governor Darden that the Committee should supply him with a plan to cover the proper distribution of medical service for people of the lower income bracket in the State of Virginia. This meeting was held just prior to the convening of the State Legislature. Governor Darden had made a similar request of Dr. Riggin, a member of this Committee and Health Commissioner of the State. When the Committee met it was found that Dr. Riggin had made a rather exhaustive study of the plans that were in operation and were in the process of being created. These plans were discussed by the Committee and many of the plans were studied in some detail.

It was the impression of the Committee that a survey of the needs of the distribution of medical care in the State should be made before any plan could be approved and presented to the Legislature. Dr. Riggin was instructed by the Committee to convey to the Governor this impression.

The second meeting was called in order that the Committee might meet a Committee from the Farm Security Administration. Mr. James S. Wills, State Director of the FSA in Virginia, and Mr. C. Rex James, Senior Health Service Specialist of the FSA, met with the Committee. After the representatives of the FSA described the plans which their organizations had had in operation in North Carolina for several years and a similar plan which was in operation in West Virginia, the Committee was of the

opinion that the plans which were in operation in these two states referred to and a similar plan which was being proposed for Virginia were satisfactory and found no reason to criticize the effort to establish it in our State. This entire effort is directed towards the better medical care for individuals on farms who could not afford to pay for regular medical service.

A suggested schedule for surgical fees was presented to the Committee and they felt that the fees were reasonable, considering the low income bracket group of borrowers who were being covered by this proposed plan.

The last meeting was called at the instigation of Dr. C. B. Bowyer, President of the Medical Society of Virginia, who supplied the Committee with a letter from Dr. Mueller, Secretary of the Chicago Medical Society, along with resolutions passed by the Chicago Medical Society and presented to the members of Congress from Illinois. The substance of these resolutions were first a general approval of the Chicago Medical Society of the Federal Government's plan to furnish restricted obstetrical and pediatric care for the wives and babies of enlisted men who were in the Armed Forces. The resolutions indicated that the Chicago Medical Society felt that certain military officers of the lower grades should be included in this coverage of their wives and children. The resolutions vigorously condemned the handling of this fund by the Children's Bureau. The Committee studied the resolutions passed by the Chicago Medical Society, but inasmuch as the meeting was held after the meeting of the American Medical Association in Chicago and these particular resolutions were handled by the Council of the American Medical Association, it was felt that there was no occasion for commenting upon the resolutions. Any action which the Committee might have taken could not have influenced the Council's action.

It is the plan of the Committee to ask that these resolutions passed by the Chicago Medical Society be returned to the President of the Medical Society of Virginia with the suggestion that these resolutions be read to the Council of the Medical Society of Virginia at its next meeting.

The Committee on Public Relations and Medical Service feels that there is definitely a need for a better distribution of medical care in the State of Virginia. The work which is being done by the Rural Health and Medical Care Study has definitely established that certain of the people, particularly in the rural districts, are suffering from the lack of medical care which they are entitled to. It is recognized by the Committee that a more complete understanding of this deficiency in medical care must be established before any definite plans can be originated for its correction. The Governor's interest in this problem has resulted in an instruction to the Virginia Advisory Legislative Council that this matter be studied in detail during the next two years and it is felt that a plan will be presented to the next Legislature which will cover a more adequate distribution of medical care in the State.

Dr. Bowyer, President of the Medical Society of Vir-

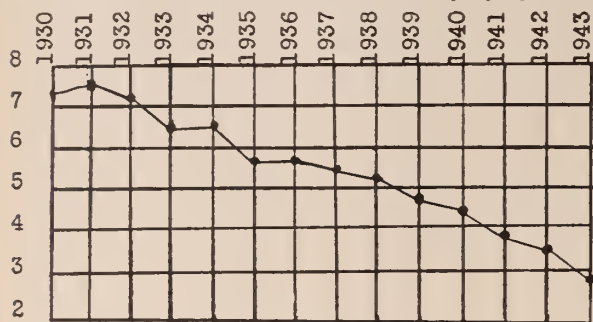
ginia, has indicated to Mr. John Boatwright, Acting Chairman of the Virginia Advisory Legislative Council, that the Committee will be glad to meet the Virginia Advisory Legislative Council and offer any advice which they feel is practical for the creation of a plan for the distribution of medical care in the State. Mr. Boatwright has indicated that the Committee will be called upon for service when the Virginia Advisory Legislative Council meets.

The Committee on Public Relations and Medical Service feels that from the various efforts which are being made now to study the problem of the distribution of medical care and the cost of such care that there will be evolved a plan which will satisfactorily meet the demands of the State. It is hoped that by the time the next Legislature meets the Committee on Public Relations and Medical Care will be in a position to assist with such legislation as will solve this very important question. The Committee definitely feels that any solution to this problem should be on a state level. They do not feel that the problem can be solved by federal legislation primarily because there is no uniformity in the requirements for this service.

J. M. EMMETT, *Chairman*

Maternal Health

More babies were born in Virginia during the past year than ever before. The maternal death rate accompanying the total of 68,382 births dropped to 2.9, the lowest yet recorded in this state. The consistent decline in the maternal death rate in Virginia during the past eight years was maintained and is shown in the accompanying chart.



Forty-eight per cent of the recorded births were in hospitals as compared to 17 per cent in 1936. Eighteen per cent of the births were attended by midwives as compared to 28 per cent in 1936.

The work of the prenatal clinics was continued although handicaps were encountered. Lack of transportation, difficulty in securing clinicians, reduction in public health nursing personnel, and other situations directly or indirectly attributed to present emergencies were factors making the operation of prenatal clinics difficult. Twenty-eight clinics were closed and seven new ones opened, making a total of eighty-eight prenatal clinics in operation at the end of the year. Maternal visits to clinics during the year totaled 35,709 as compared with 33,416 for the previous year. Improved economic conditions accounted for decreases in clinic activities in most of the

cities; in certain rural areas increases were noted.

The Committee feels that the continued operation of the "Maternal and Child Health Hospitalization Plan" for the care of indigent maternity and infant patients with abnormal conditions has demonstrated the merit of this undertaking. During the twenty-two months of operation there have been eight hundred and thirty-six obstetric patients with abnormalities hospitalized under this plan, while during the past twelve months five hundred and twenty-six were hospitalized.

A case report of a maternal death has been presented in each issue of the VIRGINIA MEDICAL MONTHLY. The purpose has been to comment favorably or unfavorably upon the management that was provided as well as to offer accepted procedures. Many of the subjects in the field of obstetrics have been covered. Reprints have been supplied to those physicians who desired them. It is felt that the value of these case reports has justified the effort.

An editorial in the VIRGINIA MEDICAL MONTHLY, September 1943, expressed the views of the Committee on Maternal Health regarding the federal plan for "The Care of Wives and Infants of Enlisted Personnel of the Armed Forces." The views of the Committee have not changed since that time. The plan, which has now been in operation in Virginia approximately one year, has been widely publicized by the federal bureau and many patients have requested care. Various physicians have made both favorable and unfavorable comment. All of them are aware that their participation is voluntary. The Committee realizes that an enormous amount of time and effort has been required of the Bureau of Maternal and Child Health for the administration of this program for Enlisted Men's Wives, and both the Committee and the Bureau are afraid that this has not contributed toward the advancement of their real function and program, which is the protection of the Maternal Health in the State of Virginia.

The Committee requests that the same appropriation for postage and incidentals be made for next year.

T. J. WILLIAMS, *Chairman*

C. J. ANDREWS

A. L. CARSON

A. M. GROSECLOSE

E. B. KILBY

J. A. OWEN

M. P. RUCKER

Child Welfare

Due to existing conditions there was no effort made to hold a formal meeting of this Committee during the year.

Each member was written a letter requesting that suggestions be conveyed to the Chairman by mail. One reply was received, emphasizing the importance of immunization. Dr. I. C. Riffin, State Health Commissioner, also stressed the importance of immunization in a letter addressed to the Chairman.

There was an informal meeting of some members of the Committee in Charlottesville at the Spring meeting of the Virginia Pediatric Society. It was brought out at

this meeting that there is no institution in Virginia for the care of children with active communicable tuberculosis. These cases are not admitted to any of the State Hospitals and so far as we can learn, there is no place where they can be cared for. It is our recommendation that some effort be made to remedy this condition.

It was also brought to our attention that there is no place in Virginia for the care and training of feeble-minded children except the Colony at Lynchburg and it is pitiful to mix these children with epileptics. Many feeble-minded children are potential subjects for occupational therapy and many others can be trained to care for themselves.

We feel that these matters are important and hope that whoever succeeds us on this Committee will follow through. We are still working, getting all the information we can to pass on to our successors if they desire us to do so.

P. W. MILES, *Chairman*

R. H. DuBOISE

C. E. CONRAD

T. R. BOWERS

MARY E. JOHNSTON

E. C. HARPER

WM. T. GRAHAM

Walter Reed Commission

Everything is in good shape at Belroi, the birthplace of Walter Reed, except for a few minor repairs which are being taken care of.

It is recommended that the fire insurance be continued as well as the appropriation of \$60.00, or as much thereof as needed, for repairs and upkeep of the house and grounds.

C. P. JONES, *Chairman*

J. D. CLEMENTS

J. W. SMITH

Tuberculosis

The Tuberculosis Control Program in Virginia for the past year has remained fundamentally the same as formerly, although many handicaps have been experienced which have made it difficult to operate. The problem of personnel shortage in all departments in the state sanatoria is one of major importance. On account of this shortage, it has not been possible to take care of as many patients as the state sanatoria usually do. It has also been necessary to limit the admission of patients chiefly to those of the ambulant type. Along with the shortage of employees in all departments of the sanatoria, there has been critical shortage in the dining room and kitchen help, hospital orderlies, and nursing service.

The tuberculosis death rate in the state continues to show a decline, which is unusual in wartime. Routine chest x-ray examinations of the men at the Army Induction Centers have discovered a number of early cases of tuberculosis, and provisions have been made for their treatment in most instances where it was needed.

DEATH RATE:

In 1943 there were, in the state, 1,400 deaths from all forms of tuberculosis, both white and colored. There were 660 deaths in the white race and 740 deaths in the colored race—the rate per 100,000 for the two combined races was 49.8 (white 30.2 colored 107.9). This is a reduction of 192, or 12.06 per cent in total deaths as compared to 1942. However, this reduction can hardly be expected to continue when the full devastating effects of war have had adequate time to be felt.

BEDS FOR TREATMENT:

War conditions have retarded the building program for increasing the bed capacity at the state institutions. The total number of beds in the state for the treatment of tuberculosis remains the same; however, at Pine Camp Hospital forty beds for white patients were made available to the colored division. There are almost two beds for every death among the white race, while there are only 501 beds for 740 deaths in the colored race. The urgency of the situation would certainly require that the beds for the colored race be increased considerably as soon as conditions are such that this can be done. To conquer tuberculosis in Virginia, it is going to be necessary to have more beds to treat colored people.

Sanatorium Beds:	White	Colored	Total
State -----	770	269	1,039
Municipal -----	353	232	585
Total -----	1,123	501	1,624

VIRGINIA TUBERCULOSIS ASSOCIATION:

The excellent educational work of the Virginia Tuberculosis Association is a vital factor in assisting to find the early case of tuberculosis. Through this organization thousands of people are reached in talks, informative pamphlets, posters, and moving pictures. Mass chest x-ray surveys have been sponsored, financed, and in many instances conducted by the local associations. They have also given generous financial assistance for sanatorium care of patients when necessary. The Christmas Seal Sale, under the direction of the Virginia Tuberculosis Association, was the largest in the history of the state.

SELECTIVE SERVICE:

Since the Armed Forces Induction Stations began to operate in November, 1940, there has been a total of 2,814 rejections on account of clinical tuberculosis reported to the State Health Department. Four hundred and seventy-five of these cases were reported July 1, 1943 to January 1, 1944. These reports are tabulated and referred to State Health Department field personnel for follow-up. A check is now being made to determine the number of sanatorium admissions in this group and other pertinent information regarding each reported case.

INDUSTRIAL SURVEYS:

The industrial chest x-ray surveys directed by the Bureau of Industrial Hygiene were begun in June, 1941, and during the period of approximately three years 115,627 persons were x-rayed throughout the state. For the fiscal year July 1, 1942 to June 30, 1943, the findings were as follows:

Secondary, or reinfection tuberculosis (active)-----	160
Secondary, or reinfection tuberculosis (healed)-----	32
Primary tuberculosis (active)-----	18
Primary tuberculosis (healed)-----	\$18
Suspicious-----	129

COLLAPSE THERAPY:

There has been some reduction in the collapse therapy program due to the loss of some of the physicians to the military service, who have not been replaced. At the present time there are operative fifty-four stations.

DIAGNOSTIC CLINICS:

The mobile x-ray clinics have continued to operate except for a two months period when it became necessary to discontinue one unit because of lack of personnel. These clinics are now operating, although only one clinician has been secured. The other unit is taken care of by either the Director, or his assistant, of the Tuberculosis Out-Patient Service of the State Department of Health.

J. B. NICHOLLS, *Chairman*

C. L. HARRELL

W. J. OZLIN

Syphilis Control

This Committee met in the State Office Building in Richmond, on Friday, January 14, 1944. The Committee consisted of Dr. D. C. Smith, University; Dr. J. W. Love, Alexandria; Dr. J. R. Blalock, Marion; Dr. R. V. Fowlkes, Richmond, and Dr. W. W. S. Butler, Chairman, Roanoke. Dr. Kimbrough of Norfolk was not officially a member of the committee on account of duties assigned him as chairman of the Committee on Nutrition, but at my request he attended the meeting and offered a number of valuable suggestions. With us also were Dr. Kunkel and Dr. Hon of the United States Public Health Service and Dr. W. E. Baker, acting as secretary. Dr. I. C. Riggins, the State Health Commissioner, attended a portion of the meeting.

The first subject brought to the committee for discussion was the desirability of the State Health Department making use of centers or hospitals operated to provide rapid methods of therapy for both syphilis and gonorrhea. That the committee might be fully informed as to the policies of operation of such institutions together with the methods of treatment employed, their desirability and adequacy, Dr. Kunkel reported on the policies and treatment procedures in force at the Richmond Municipal Hospital where he has been assigned by the Public Health Service as the Medical Officer in Charge. Following this, Dr. N. B. Hon of the United States Public Health Service reported to the committee on the results obtained with rapid treatment methods in the centers in other parts of the country similar to the proposed rapid treatment facilities in Virginia. During the lunch hour the committee adjourned to the Richmond Municipal Hospital to inspect the facility and its equipment, to see patients receiving rapid therapy to review actual case reports. After thorough consideration the committee came to the following conclusions with regard to approval of the use of rapid treatment center facilities in Virginia:

"This committee wishes to endorse the use of these facilities as administered by the United States Public Health Service in cooperation with the State Health Department. These methods are to supplement the present methods in use. This committee has agreed to act as consultants with the staff and agencies conducting the rapid treatment centers in Richmond and Norfolk and with the State Venereal Disease Control Program."

This endorsement was forwarded by the chairman of the committee to Dr. C. B. Bowyer, President of the Medical Society of Virginia.

The second item brought to the committee for discussion was the subject of the amount of honoraria to be paid physicians throughout the state acting as clinicians in the Venereal Disease Clinics operated in conjunction with the local health departments. It was reported that the present payment was in the amount of \$7.50 for the usual two-hour clinic session. The committee approved the continuation of honoraria payments in this amount.

The list of drugs to be distributed free of charge by the State Health Department for the treatment of the venereal diseases was submitted to the committee for approval. Of the list of drugs presented only Clorarsen was disapproved. It was the conclusion of the committee that inasmuch as Clorarsen had not been accepted by the Council of Chemistry and Pharmacy of the American Medical Association it should not be included in the list of drugs for free distribution at this time. It was the further conclusion of the committee that when Clorarsen and other equivalent products had been approved by the Council they might be included in the list of free drugs.

The question of distribution by the State Health Department of the pentavalent arsenical tryparsamide and old arsphenamine in the same manner as other arsenicals for the treatment of syphilis was considered. It was the committee's decision that these drugs might be distributed on special order only.

The treatment schedules approved by the Syphilis Control Committee in the past for use in the clinics operated in conjunction with local health departments were presented for review and revisions where indicated. With the approval of the committee the chairman appointed Dr. D. C. Smith and Dr. Raymond Kimbrough to review the treatment schedules and recommend those revisions they deemed necessary.

With the advent of rapid treatment methods and the possible use of penicillin in syphilis therapy, it was thought wise to delay revisions of treatment schedules until the usefulness of these new methods had been more thoroughly evaluated.

The committee approved the treatment of selected cases in clinics with concomitant administration of arsenical and bismuth drugs. The committee understood that this method of treatment was to be largely confined to the treatment of Selective Service registrants who had been rejected from Service in the armed forces because of early syphilis.

The committee approved the intravenous administration of drugs by nurses in the venereal disease clinics provid-

ing such therapy was administered under the supervision of the clinician in charge.

The following letter was approved for submission to the Hon. Thomas B. Stanley, Speaker of the House of Delegates, and a copy of same submitted to Dr. C. B. Bowyer, President of the Medical Society of Virginia:

"It is a matter of record that the venereal disease control problem in Virginia is crucial. It is estimated that approximately forty-three individuals for every one thousand population in the Commonwealth are infected with syphilis.

"To assist in solving this problem, the United States Public Health Service has been requested to establish, operate and maintain a facility for the rapid treatment of venereal diseases in a communicable stage. They have agreed to establish such a facility in the city of Norfolk to which such patients from all parts of the State may be admitted.

"The above institution will only be operated for the duration of the war. We believe, however, that there will be a continuing need for this type of facility after the war, if this crucial problem in Virginia is to be successfully solved.

"The Syphilis Control Committee of the Medical Society of Virginia, therefore, formally recommends that a resolution be adopted by both Houses of the General Assembly of the Commonwealth of Virginia now in session requesting the Virginia Advisory Legislative Council to study this need and make recommendations based on their findings at the General Assembly next called in session."

It was brought to the committees attention that there was some feeling in certain lay groups that the General Assembly should be urged to enact legislation requiring physicians to report all venereal disease cases by name. It was the unanimous opinion of the committee that such legislation should be disapproved for the following reasons:

Such legislation would greatly interfere with obtaining the patients cooperation in continuing under regular treatment. Such legislation would tend to deter the individual infected with a venereal disease seeking proper medical attention.

The committee did approve and recommend legislation directed toward enforcing the treatment of individuals found to be infected with a venereal disease until maximum benefit had been obtained.

W. W. S. BUTLER, *Chairman.*

To Study Coroner Situation

At the last meeting of the Medical Society of Virginia your Committee on Coroners made its report and advanced a plan of action which, after discussion in both the Council and before the House of Delegates, was unanimously approved. Briefly this plan advocated a five-man non-political commission of postmortem examiners, a central state laboratory and office under the direction of a recognized medico-legal expert, to be known as the Chief Medical Examiner. His services as a teacher

of his subject were to be made available to both the Medical Department of the University of Virginia and the Medical College of Virginia. Qualified pathologists were to be employed by the Chief Medical Examiner to perform autopsies in those areas of the state distant from his office but accessible to them. The office of county coroner was to be retained with needed modification in its functions. County coroners were hereafter to be called Deputy Medical Examiners and were to be made responsible to the Chief Medical Examiner. The plan unified procedure in medico-legal cases in Virginia, brought the whole set-up under a non-political board, a majority of whose members were to be physicians, and went far to safeguard the public interest and to give the state of Virginia the kind of efficient procedure in medico-legal cases known to be functioning well in other states.

As you are aware the plan was incorporated in a bill, which the subcommittee of the Virginia Legislative Advisory Committee approved. This bill would have been introduced into the last legislature but for the fact that your own Legislative Committee had another bill before the House which they regarded as more important. Fearing that the bill to improve the medico-legal set-up in Virginia might in some way interfere with the changes in the Medical Practice Act they were advocating, our committee was asked to withdraw its bill.

During the time this plan for an improved coroner system was being discussed by the Virginia Legislative Advisory Council, your committee was surprised to discover that there was some opposition to the proposed bill. There were even a few doctors of medicine who appeared not to appreciate its broad and unselfish aims and to have confused a natural desire of the officeholder not to be disturbed and an ingrained resistance of some persons to any change in the *status quo ante*, with what, in the opinion of an overwhelming majority of the medical profession, is clearly in the public interest.

With the bill already prepared, your committee is ready to urge its passage at the next meeting of the Legislature and would like to have another mandate from the Medical Society of Virginia directing the committee to proceed with its plans. It would further urge placing upon the Legislative Committee of the Society the obligation of securing interested and qualified sponsors and of seeing the bill through the Legislature. In its opinion the Society should enjoin upon every member the obligation of enlightening their own coroners and the representatives from their particular districts with the facts in the case and the motives behind the Society's interest in it.

WYNDHAM B. BLANTON, *Chairman*

M. B. BEECROFT

K. D. GRAVES

J. EDWIN WOOD, JR.

E. G. SCOTT

J. H. SCHERER

W. D. KENDIG

G. B. SETZLER

G. C. WILLIAMS

W. O. BAILEY

Cancer

The Cancer Committee has had no formal meeting up to this time and has, therefore, no report for the House of Delegates.

A meeting, however, has been definitely planned, preceding the meeting of the Medical Society of Virginia, and a report will be made to the House of Delegates when it convenes.

EDWIN P. LEHMAN, *Chairman*.

Industrial Health

The Committee on Industrial Health had some intra-committee correspondence, and had a meeting on April 11, 1944, at which all members were present, except the two from the far west. Dr. Orlen J. Johnson, Field Representative of the Council on Industrial Health of the American Medical Association was present, and gave valuable advice.

At this meeting methods of acquainting the Society Membership with the opportunities and needs in Industrial Medicine were discussed. It was finally decided to ask the Department of Clinical and Medical Education to put on, with our committee co-operating, five institutes on Industrial Health in five cities in western and northern Virginia. The programs for these were in process of arrangement, but due to the extreme rush of the doctors in private practice, and the difficulty of getting the men to take positions on the program, it has been since decided to delay these meetings until very late fall or next spring.

It was also agreed upon at this meeting that the Committee should prepare material on the subjects relating to Industrial Medicine from which the County Medical Societies throughout the state could develop local programs on Industrial Medicine.

F. J. WAMPLER, *Chairman*

G. C. AMORY

W. B. BARTON

R. D. CAMPBELL

J. B. PORTERFIELD

H. U. STEPHENSON

W. L. WEAVER

To Confer with State Board of Nurse Examiners

There has not been a meeting of this Committee. The members have been circularized and none had anything to bring before such a meeting; therefore no meeting has been called.

Miss McLeod has given the Chairman a report of the work done by the State Board of Nurse Examiners.

I. A. BIGGER, *Chairman*

Advisory Board to the Woman's Auxiliary

Our Committee has had very little work to do. A few papers have been referred which have been read and approved for publication. Some advice on questions of policy have been answered.

We find the women of the Auxiliary are anxious to co-operate with members of the Medical Society and anxious

not to do things which do not meet with the approval of the Society.

H. A. LATANE, *Chairman*.

Mental Hygiene

There has been no formal meeting of this Committee during the past year, although each of the committee has been very closely associated with all of the regular legislative programs dealing with mental health.

JOSEPH E. BARRETT, *Chairman*.

Representative on Committee for Procurement and Assignment of Nursing Service

There has been no meeting of the Committee for Procurement and Assignment of Nursing Service.

HERBERT C. LEE, *Representative*.

Rehabilitation

The Committee on Rehabilitation has had only one formal meeting, but there has been a great deal of correspondence among the members.

The most important action taken has been the selection of physicians for the State committee to consult with in the solution of their medical problems. This list has been sent out to the members of the committee for their approval, but so far none has been returned.

Except for the above action, nothing of official nature has occurred.

WILLIAM B. PORTER, *Chairman*.

Delegates to Richmond Meeting.

The following have been reported as delegates and alternates from the component societies to the annual meeting of the Society in Richmond. If you have not reported, will you please send names at once to headquarters, 1200 East Clay Street, Richmond 19.

<i>Delegate</i>	<i>Alternate</i>
Accomack	
Dr. J. L. DeCormis	Dr. J. F. Edmonds
Albemarle	
Dr. J. F. McGavock	Dr. W. W. Waddell
Dr. E. P. Lehman	Dr. McLemore Birdsong
Dr. D. C. Wilson	Dr. W. Roy Mason, Jr.
Alexandria	
Dr. James Love	Dr. H. A. Latane
Alleghany-Bath	
Dr. J. M. Emmett	Dr. Thomas Winn
Dr. S. P. Hileman	Dr. M. B. Jarman
Arlington	
Dr. W. C. Welburn	Dr. W. P. Hammer
Dr. J. E. Payne	Dr. Jerome Cope

<i>Delegate</i>	<i>Alternate</i>	<i>Delegate</i>	<i>Alternate</i>
Augusta		James River	
Dr. Guy R. Fisher		Dr. Garland Dyches	Dr. O. L. Huffman
Dr. John H. Guss		Dr. Nash P. Snead	Dr. E. B. Nuckols
		Dr. S. W. Selden	Dr. L. W. Hulley
Bedford		Lee	
Dr. T. P. West	Dr. J. G. Jantz	Dr. G. B. Setzler	Dr. J. H. Dellinger
Charlotte		Loudoun	
Dr. Thomas Watkins	Dr. W. R. Martin	Dr. G. H. Musgrave	Dr. W. O. Bailey
Culpeper		Louisa	
Dr. O. K. Burnette	Dr. D. W. Kelly, Jr.	Dr. H. S. Daniel	Dr. E. B. Pendleton
Danville-Pittsylvania		Lynchburg	
Dr. P. W. Miles	Dr. R. W. Garnett	Dr. S. E. Oglesby	Dr. J. G. Holland
Dr. H. H. Hammer	Dr. C. D. Bennett	Dr. E. G. Scott	Dr. E. A. Harper
Dickenson-Buchanan		Mid-Tidewater	
Dr. E. M. Fusco	Dr. J. C. Moore	Dr. H. A. Tabb	
Dr. Hugh Griffin	Dr. R. L. Phipps	Dr. R. D. Bates	
Elizabeth City		Dr. W. P. Jones	
Dr. F. A. Kearney	Dr. R. H. Wright, Jr.	Dr. A. W. Lewis	
Fairfax		Dr. J. R. Parker	
Dr. Elmer Waring	Dr. Ernest Shull	Dr. J. R. Gill	
Fauquier		Dr. Clarence Campbell	
Dr. J. E. Knight	Dr. M. B. Hiden	Nansemond	
Fourth District and Southside		Dr. F. I. Steele	Dr. H. D. Crow
Dr. J. M. Habel	Dr. H. C. Rucker	Nelson	
Dr. D. A. Christian	Dr. F. H. Lukin	Dr. B. F. Randolph	Dr. H. G. Dickie
Dr. F. N. Mallory	Dr. F. H. Anderson	Norfolk	
Dr. G. M. Naff	Dr. L. P. Jones	Dr. N. F. Rodman	Dr. R. B. Grinnan
Dr. W. D. Kendig	Dr. H. E. Whaley	Dr. C. L. Harrell	Dr. R. DuVal Jones
Dr. C. V. Montgomery	Dr. P. H. Winston	Dr. Claiborne Willcox	Dr. W. E. Butler
Dr. W. M. Phipps	Dr. F. M. Howell	Dr. Foy Vann	Dr. B. L. Parrish
Dr. J. H. Smith	Dr. F. R. Crawford	Dr. N. G. Wilson	Dr. K. K. Wallace
Dr. W. R. Warriner	Dr. J. A. B. Lowry	Dr. A. A. Burke	Dr. J. W. White
Dr. F. E. Steere	Dr. B. H. Knight	Northampton	
Dr. T. F. Jarratt	Dr. R. B. McEwen	Dr. S. K. Ames	Dr. J. W. Jackson
Dr. C. S. Dodd	Dr. Meade Edmunds	Northern Virginia	
Fredericksburg		Dr. George Long	
Dr. E. R. Ware	Dr. W. W. Butzner, Jr.	Dr. O. W. Carper	
Dr. R. J. Payne		Dr. C. O. Dearmont	
Dr. A. M. Arritt		Dr. P. W. Boyd	
Dr. John Broadadd		Dr. John Snead	
Dr. Rogers Harris		Dr. H. W. Miller	
Halifax		Patrick-Henry	
Dr. J. D. Hagood	Dr. J. A. Owen	Dr. J. T. Shelburne	Dr. B. A. Hopkins
Hanover		Dr. H. G. Hammond	Dr. D. L. Freshman
Dr. I. K. Redd	Dr. J. A. Wright	Piedmont	
	Dr. J. A. Wright, Jr.	Dr. J. E. Cole	Dr. J. F. Thaxton
Isle of Wight			Dr. Estis Kidd
Dr. Rea Parker	Dr. F. I. Steele		Dr. L. W. Hulley

<i>Delegate</i>	<i>Alternate</i>	<i>Delegate</i>	<i>Alternate</i>
Richmond		Southampton	
Dr. E. H. Terrell	Dr. W. P. Barnes	Dr. R. L. Raiford	
Dr. M. P. Rucker	Dr. B. B. Bagby		
Dr. P. N. Pastore	Dr. T. S. Shelton	Southwestern	
Dr. F. P. Fletcher	Dr. D. G. Chapman	Dr. C. F. Graham	Dr. E. M. Chitwood
Dr. Frank Pole	Dr. A. E. Turman	Dr. S. A. Tuck	Dr. W. C. Caudill
Dr. T. B. Washington	Dr. T. F. Gill	Dr. A. B. Graybeal	Dr. J. A. Soyars
Dr. W. R. Bracey	Dr. Wallace Blanton	Dr. J. J. Davidson	
Dr. O. L. Hite	Dr. H. R. Masters	Dr. J. J. Giesen	Dr. A. M. Showalter
Dr. E. C. Harper		Dr. H. M. Hayter	Dr. J. A. Wolfe
Dr. G. R. Maloney		Dr. V. J. Cox	Dr. W. P. Davis
		Dr. C. W. Hickam	Dr. R. H. Woolling
		Dr. W. A. Porter	Dr. J. G. Cox
Roanoke		Tazewell	
Dr. F. A. Farmer	Dr. L. D. Keyser	Dr. W. C. Jackson	Dr. J. A. Robinson
Dr. W. W. S. Butler	Dr. G. S. Hurt		
Dr. W. L. Powell	Dr. K. D. Graves	Warwick	
Dr. T. J. Hughes	Dr. Paul Davis	Dr. H. G. Longaker	Dr. A. A. Creecy
Rockbridge		Williamsburg-James City	
Col. Cole Davis	Dr. R. S. Munger	Dr. A. M. Sneed	Dr. T. B. Henderson
Rockingham		Wise	
Dr. N. M. Canter	Dr. B. S. Yancey	Dr. T. J. Tudor	Dr. F. E. Handy
		Dr. G. W. Botts	Dr. E. I. Sikes

MISCELLANEOUS

How Is Poliomyelitis Transmitted?

Dr. C. B. Bowyer of Stonega, Va., sends the following interesting communication:

TO THE EDITOR:

You may be interested in this case. Since medicine know little yet about the transmission of poliomyelitis and since it is very rare where two cases develop in the same family, I am reporting two cases in the same family in Wise County. T. A. A., laborer, living in a mountainous section, isolated and some distance from any coal colliery where he occasionally works, had a child, D. A., age 2, suddenly develop polio in August, 1939. This child was quite sick, was left a bad cripple in one leg, marked atrophy, most of the muscle group paralyzed, little knee or ankle function. The child was seen on several occasions by a health nurse but apparently the family was not much interested in hospitalizing this child. There were some cases of polio in this section in 1939 but this was an isolated case and the only one in the immediate section and the child had never been away from home. If the disease has a five year cycle: in the same home, in the same family, in the same month, 1944, S. A., three years old, developed polio, practically

the same symptoms and the same severity. This was also the first case to be reported in this section. The parents this time were willing for the child to be hospitalized and the child was immediately placed in Roanoke Hospital where she is a patient now. A. is a laboring man, very large family, he rents his little home and can only furnish his family the meager necessities of life. There is no sanitation whatever and his living is of the pioneer days. The family is isolated and has very little contact with other people in the summer time. The only known source of contact for the last case: an elder son helping some this summer on a laundry wagon collecting and handling soiled clothes for a laundry.

September 7, 1944.

Blue Cross Hospitalization Conference.

Since 1938 Medical Service Plans in cooperation with the Blue Cross Hospitalization Plans have been adopted in the United States. At present about 30 are in active operation and many more will be within the next year. The primary motive is not only to include hospital coverage but to meet the expenses of the patients' professional care. Several study groups have been established in Virginia to endeavor

to develop a workable plan to meet the needs of the patients and the physicians. There has been in operation with the Richmond Hospital Service Association and the Raiford Clinic of Franklin a complete coverage (with the exception of home visits) offered the employees of Chesapeake-Camp and Camp Manufacturing Company. This local plan has been in operation for four years and has been improved each year on working out defects that can be only found on practical use and operation. To date it has proven to be very successful and there is local desire to offer it to other groups.

On August 30, 1944, the Hospitals served by the Richmond Hospital Service in 67 counties in Central Virginia were invited to attend a conference in Franklin, as guests of the Raiford Clinic Staff to discuss the possibility of adding Surgical, Obstetrical, X-ray, and Medical coverage to the present Blue Cross Hospital Service Plan. Dr. Morgan Raiford presided. An outline was sent to a member of each hospital in the area served and the Richmond Academy of Medicine. Each group professed a keen interest in the aims of the meeting and only three were unavoidably detained. These three hospital staffs had discussed the outline as given and were in full accord with the proceedings. The purpose of the meeting was outlined as follows:

PURPOSE OF THE MEETING

1. To increase the scope of service and benefits to the subscribers of our Blue Cross Hospitalization Plan, as it now serves Central Virginia.
2. To discuss the additional coverage:
 - a. Surgical
 - b. Obstetrical
 - c. X-ray
 to the present Blue Cross Hospitalization Plan.
3. There is a growing public demand that more complete medical program be added to our Blue Cross Plan.
4. A plan proposed in comparison with others should have for its purpose to protect more fully the low and moderate income groups. (Stipulations be inserted for those making higher gross incomes that the surgeon have the privilege to charge additional than the fee covered by the contract.)
5. The Richmond Hospital Service Blue Cross Plan has an excellent worked out program that appears to meet, on a whole, most of the public needs.

6. The medical profession should take an active part in order to meet the requirements of its patients, not only from scientific advancements but also from the needs of the patients economy.
7. That an intelligent and thorough approach should be made from within the medical profession in order to neutralize political measures that have and will arise in the future.
8. The medical profession cherishes to maintain its independence and freedom in serving mankind in the highest ethical standards and in order to hold to that great principle we, as physicians, must maintain ourselves to meet the needs of our times.

Each hospital representative was called upon to express his views, and, as guests of the conference, Dr. Julian Rawls and Dr. N. F. Rodman of the Norfolk County Medical Society on Medical Plan Committee gave their experiences and results of study on how a practical plan may be formulated. Mr. Haskins Coleman outlined the details of how such a coverage could best be conducted. The conference members were in unanimous agreement to create an organization that would include Surgical, Obstetrical, X-ray and that medical coverage would follow in the near future. The latter coverage was thought best to bring in as the first three could best begin as through experiences with other like programs.

Dr. R. L. Raiford gave a brief talk of the profession entering upon a new era in the method of distributing medical and hospital care to the masses of low and moderate income groups.

Mr. George E. Pillow spoke briefly on "What the Man on the Street Thinks about Medical Care", bringing out the fact that the demand for hospitalization insurance has sprung up over the past decade. He stressed the importance of the profession in solving its own problems rather than leaving it up to governmental agencies.

After the discussions, it was proposed that a steering committee be formed to formulate plans for perfecting the necessary legal and comparative structure of such an organization. The study group were as follows:

1. Dr. Morgan B. Raiford, Chairman, Raiford Clinic, Franklin.
2. Dr. Vincent Archer, University Hospital, Charlottesville.
3. Dr. Oscar Hite, Richmond.

4. Dr. William Pretlow, Warrenton Community Hospital, Warrenton.
5. Dr. Richard P. Bell, Kings Daughters Hospital, Staunton.

Dr. M. P. Rucker and Dr. Julian Rawls are to be invited to attend because of their past experience and study of such plans. Mr. Haskins Coleman was asked to act in the capacity of Executive authority since the Richmond Hospital Service Plan would be asked to be the agent of such plan. The committee is to meet in Richmond on September 6, 1944.

The steering committee to study the Surgical, Obstetrical, and X-ray coverage to the present Blue Cross Hospitalization met in Richmond September 6, 1944. The members were as follows:

1. Dr. Morgan B. Raiford, Chairman, Franklin.
2. Dr. Vincent Archer, Charlottesville.
3. Dr. Richard P. Bell, Staunton.
4. Dr. William Pretlow, Jr., Warrenton.
5. Dr. Oscar Hite, Richmond.
6. Mr. Haskins Coleman, Richmond.
7. Dr. T. Dewey Davis, President-Elect of Richmond Academy of Medicine.

Dr. M. Pierce Rucker and Dr. Julian Rawls were invited to meet with the members to aid in the plan formation.

Modifications of the proposed plan were made as follows:

1. (a) Reduction of incomes of subscribers.
Single subscribers making up to \$2,000.00, man and wife making up to \$2,500.00 a year, family—man, wife and all children making up to \$3,000.00 per year.
- (b) This is to include the sum of the gross incomes of all members of the family.
2. Establishment of a medical advisory board. The purpose of the board to be as follows:
 - (a) pass on additional fees up to 50 per cent of the schedule presented for complicated cases.
 - (b) when a complicated case is treated by a specialist, either referred or primary, the advisory board may approve of the additional fee coverage. A specialist being defined as:
 1. Fellow of American College of Surgeons.
 2. Diplomate of the American Board.

- (c) The advisory board to pass on conditions not covered in the "schedule of operations".
3. The increase of ten cents to each subscriber's monthly payments in order to meet the conditions in paragraph two.

The purpose to enable the plan to create greater coverage in case the patient has to be referred to another physician or hospital. (For example complicated orthopedic problems.)

4. The Richmond Hospital Service to be merely an agent for the group.
5. (a) That each member of the committee to re-return to their staffs or Society and present the plan as formulated, then have a meeting for its approval at each of the participating hospitals. They would elect a representative for a called meeting to select a board of directors.
- (b) It was urged that each hospital group invite Mr. Haskins Coleman of Richmond Hospital Service to meet with them in order to explain the details of the program.
6. That the Service contract meets best the needs of the public whereas the indemnity type of contract would necessitate the formation of an insurance company with a working capital of \$50,000.00 for legal requirements. That indemnity is not a complete coverage.
7. That a meeting be held of all participating hospitals or societies for the purpose of electing a board of directors and final approval of the organization.

It was desired to hold this meeting by the first week in October, 1944. A notice will be sent to each hospital notifying of its date.

8. That minutes of the conference and steering committee be presented to the VIRGINIA MEDICAL MONTHLY for its October, 1944, publication.
9. To further investigate medical coverage. Study cases requiring deep x-ray therapy or radium also for the treatment and cure of neoplasms, also how nervous and mental cases may be covered.
10. X-ray coverage up to \$35.00 for any one year. It is used for diagnostic purposes in surgical and obstetrical cases only. The limits of this coverage to be increased on further study.

The committee adjourned.

MORGAN B. RAIFORD, *Chairman.*

MILITARY MEDICINE

The following letters have been received by the secretary from two members in the Service. We would like to hear from more. How about it? We know you all have had some interesting experiences which could be published.

September 7, 1944.

Received your V-mail letter of August 16 a few days ago and appreciated it very much and the interest you and the State Society are taking in the Service men in sending us the MONTHLY. It was quite interesting to hear of the M.D.'s out here and that a copy of the MONTHLY had been reported to you as being found in the old abandoned Marine Camp.

Well, we are just north of the equator, and hot isn't the name for it, and this is the rainy season out here and it is apparently no trouble for it to rain.

I left Richmond via plane for San Bruno, Colorado (very close to San Francisco) June 11 and arrived the following afternoon, reporting for duty the next day. Staid there eight days, then sailed the blue Pacific; staid in Hawaii for three weeks and have been aboard ship ever since we left there. We are now in the harbor of ——— and expect to go ashore very soon, or as soon as there is some place to live. Have been here for four weeks. I went ashore Tuesday (9-5-44) and that island surely is a wreck. All of the buildings are blasted to the ground, phone and light lines of course the same way, but there are several Seabee outfits here so they will soon rebuild it. I understand there are about 12,000 service men in all there. Including our hospital unit, there were 2,000 on our ship, but practically all of them have gone ashore. Where the hospital is to be located is quite pretty—high and looking to the sea. There are forty-some medical officers and 250 hospital corpsmen in our unit (600 bed hospital).

Think we will be much better satisfied when we can get back to practicing our chosen profession and I understand there is plenty for us to do—about 9,000 civilian Jap casualties there now. They were as thick as "hops" on that little 38 square mile of an island.

Looks now that our services will be needed in or around the Philippines as much or more than here a

little later on, so do not expect to get back to the Old Dominion for quite some time.

E. R. MOORMAN, *Lt. Comdr, MC., USNR.,
Hospital Facilities,
Navy 3247, F.P.O.,
San Francisco, Calif.*

(M.C.V.-M.'30)

September 9, 1944.

I have had your letter of March 29 on my desk for a long time intending to answer your query about nurses but for various reasons did not get to it before. At the time you wrote the Army would not allow us to disclose that we were in the Solomon Islands but now we may say we are in the Russell Island Group—a mere speck usually unnamed on most of the maps.

We have had a good bit of change and experience as well since I last communicated with you. It took us quite a long time to get set up as a hospital but now we have a very excellent location near the shore and have good buildings, lights and water. We still operate without female nurses and are quite happy that way as in these isolated areas women are quite an administrative headache. We have specially trained male nurses and they do an excellent job. We have been handling casualties from some of the recent Pacific conflict and in that period have had a chance to see what these men could do with real nursing problems. At first we watched them very closely but now we have as much confidence in them as we would expect to have in any nurse. A lot of the men turned out voluntarily after doing a 12 hour day to help us on some of the more pressing work so their spirit is excellent.

Dr. J. M. Emmett and I have been having some interesting correspondence about some of the current medical problems. In particular we have been discussing the Murray Dingell bill and I find that he, like a great many others, feels that the bill includes indigents. As it now stands it includes only those contributing to Social Security and adds some few classifications of people not now covered. I would like to see a doctor-sponsored counter bill to meet the deficiencies noted by us all about which as a

group we seem to do very little except gripe about the politicians. Most of the articles we see in journals are an analysis of the offered bill and there is very little constructive criticism. Virginia's care of indigent, in my former county, certainly was zero as far as medical aid went except for providing some medicine after we saw the patients gratis.

KENNETH N. BYRNE, *Major, MC.,*
222nd Station Hospital,
APO 292, c/o Postmaster,
San Francisco, Calif.

Colonel Emmett V. Richardson, M.C.,

Of Marion, member of the class of '30, Medical College of Virginia, who was called to active army duty as a captain in April, 1941, and sent to Camp Lee, was promoted to the rank of colonel in June, 1943. He was then placed in command of a newly activated station hospital which, after a short training period, was converted to a general hospital and sent to England with Colonel Richardson in charge.

Capt. Leo Solet, M.C.,

Who entered the service from Arlington, has returned from the Southwest Pacific and is at present at Walter Reed General Hospital in Washington.

Comdr. Walter P. Adams (MC), USNR.,

Of Norfolk, is now on the staff of the U. S. Naval Convalescent Hospital at Beaumont, California. This is a 1,000-bed convalescent hospital in Southern California.

The Whole Blood Program of the Surgeon General.

The first shipment of whole blood from the United States to soldiers wounded in France was made by the U. S. Medical Department by Army plane on August 21. Daily shipments have been made since; 250 pints a day the first week, 500 pints a day the second week and 750 pints a day will be shipped soon.

The whole blood is prepared for shipment on the day it is drawn, and 21 hours after it leaves the United States, is available for transfusion in France.

Virginia Doctors in Service Supplement 8

This is the 8th Supplement to the list of Virginia doctors in Service, the original list having appeared in the July, 1942, MONTHLY, with Supplements in September and October, 1942, January, April and September, 1943, February and June, 1944. Names are in alphabetical order with home addresses in view of constant changes in location and rank. This office will appreciate being advised of omissions that they may be used in a future supplement.

On July 5, of this year, Dr. Hugh H. Trout, chairman of Procurement and Assignment Service for Virginia, advised that 941 doctors are listed as having gone in from Virginia. Some of these went direct from hospitals after internship and many names are missing in our lists.

MEMBERS OF MEDICAL SOCIETY OF VIRGINIA

Dr. William C. Barr, East Falls Church.
Dr. Harvey C. Brownley, Lynchburg.
Dr. Thomas L. Gemmill, Radford.
Dr. Barnes Gillespie, Hilton Village.
Dr. Garrett Gooch, Roanoke.
Dr. John G. Holland, Lynchburg.
Dr. Oliver L. Jones, Hopewell.
Dr. George W. McCall, Bristol.
Dr. Frederick M. Morrison, Lynchburg.
Dr. Maxwell Mund, Martinsville.
Dr. L. R. O'Brian, Jr., Lynchburg.
Dr. W. I. Owens, Pulaski.
Dr. William T. Pugh, Lynchburg.
Dr. John T. Ransone, Salem.
Dr. A. G. Schnurman, Roanoke.
Dr. J. Frederick Thackston, Bristol.
Dr. J. C. Trivett, Page.
Dr. Charles W. Warren, Upperville.

NON-MEMBERS

Dr. John E. Alexander, Arlington.
Dr. Robert B. Crichton, Arlington.
Dr. Robert Derbyshire, Lexington.
Dr. Robert C. Feamster, Lexington.
Dr. James H. Gillen, Arlington.
Dr. M. W. Glover, Arlington.
Dr. Fred Irons, Rockbridge Baths.
Dr. Sidney Lyons, Lexington.
Dr. Marsh H. McCall, Tazewell.
Dr. L. Conner Moss, Arlington.

WOMAN'S AUXILIARY to the MEDICAL SOCIETY OF VIRGINIA

President MRS. W. CLYDE WEST, Alexandria
President-Elect MRS. PAUL C. PEARSON, Turpin
Recording Secretary MRS. C. C. SMITH, Norfolk
Corresponding Secretary—
 MRS. N. G. SCHUMAN, Alexandria
Treasurer MRS. REUBEN F. SIMMS, Richmond
Chairman, Press and Publicity—
 MRS. E. LATANE FLANAGAN, Richmond

Welcome to the Richmond Convention.

To the wives of members of the Medical Society of Virginia we extend a most cordial invitation to attend the meeting of the Auxiliary at the John Marshall Hotel in Richmond, October 23-25.

It will be a pleasure to have you and members of the Richmond Auxiliary will be on hand at all times to serve you. The program in the September MONTHLY speaks for itself and we sincerely hope you will take advantage of the opportunities that are yours.

(MRS. A. G.) MARY B. SHETTER, *Chairman*.
 (MRS. E. LATANE) LOUISE W. FLANAGAN,
 Co-chairman.

Convention days are nearing, and with their arrival we will officially close our year's work—a year full of very gratifying response for your President. The county auxiliaries throughout the State can well be proud of the cooperation and good will they have rendered.

Our annual Board meeting will convene at 9:30 on the morning of October 24 at the Hotel John Marshall, Richmond (Convention Headquarters).

I hope that each and every member has received the program for the Auxiliary which was printed in the September issue of the VIRGINIA MEDICAL MONTHLY and that she will make every effort to attend all functions that are planned, taking an active part in the closing of the Auxiliary's year.

Join us—Meet and Greet—Go Forward!

EUNICE A. WEST, *President*.
 (MRS. W. CLYDE WEST).

Ten years ago in August I met with several physicians' wives at the nurses' home of the Alexandria Hospital to discuss forming an auxiliary to the

Alexandria Medical Society. As Chairman of Organization then, I felt keenly a desire that Alexandria be organized, especially in view of the fact that the state meeting was scheduled for October.

I was installed as president of the State Auxiliary at the George Mason Hotel and indeed it was my happy privilege to announce that an auxiliary had been launched in the "Convention City".

During the ten years the auxiliary has grown in membership and has made notable contributions. I point with pride that this historic city auxiliary has produced two state presidents: Mrs. H. A. Latane, who is still in active service today as Historian and Chairman of Archives and Research, the other president being Mrs. W. Clyde West who will preside at the meeting here. Our Corresponding Secretary is Mrs. Nathan G. Schuman. Three other chairmen are from this fair city, namely: Bulletin—Mrs. O. Anderson Engh; Program and Health—Mrs. George D. Denton; and Public Relations—Mrs. Robert B. Hightower.

I deem it a signal honor to welcome this active and flourishing group and cordially greet officers, delegates, members and visitors from all sections of the state.

The local convention committee has prepared a most interesting program and it is our hope that Richmond can boast of a record attendance.

It is urgently requested that each one attending the meeting register upon arrival at the John Marshall Hotel.

We are fortunate in having with us as guest speakers at our luncheon, Mrs. David W. Thomas, President of the Woman's Auxiliary to the American Medical Association; Mrs. John P. Helmick, President, Woman's Auxiliary to the Southern Medical Association; and Mrs. Colgate W. Darden, wife of the Governor of the State.

May your stay in Richmond prove enjoyable and stimulating for we have anticipated your visit with a great deal of pleasure.

It is my earnest prayer that when we meet again this world will not be fraught with persecution and bloodshed but that this world will be henceforth

and forever blessed with a victorious peace and security for all.

(MRS. JOSEPH) KATE C. BEAR,
Past-President, 1934-35.

Reporting for Hygeia.

Our goal as outlined by our President was 100 per cent subscription to *Hygeia*, each member throughout the State being asked to either subscribe to, or be responsible for one subscription.

An effort has been made to reach this goal but reports show that Virginia was outclassed in the contest and we have not reached our goal.

Location is the prime factor in our being the dark horse in this National Race. Our State is one of the busiest spots in the nation, particularly Tidewater Virginia, in war activities. Many of our members are giving every minute that is not taken up in home duties to the war program. In emergencies first things must come first. At the same time we have not failed to emphasize the importance of *Hygeia* in offering authentic health information and in urging members to subscribe and to place as many subscriptions as possible in reading rooms at camps, U.S.O. and Service Hospitals in Virginia.

If the middle-west and other states make a better showing in total number of subscriptions, may it be recorded that Virginia appreciates the value of *Hygeia* and is always glad of an opportunity to acquaint the public with what we know to be the best magazine on health subjects today.

JOSEPHINE T. HORTON,
Hygeia Chairman.

BOOK ANNOUNCEMENTS

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us same.

The Analysis and Interpretation of Symptoms. Edited by CYRIL M. MacBRYDE, M.D. Contributors: Paul B. Beeson, M.D.; Richard H. Freyberg, M.D.; Edwin F. Gildea, M.D.; Sara M. Jordan, M.D.; Sidney A. Portis, M.D.; Leon Schiff, Ph.D., M.D.; Davis M. Skilling, M.D.; John R. Smith, M.D.; and Harold G. Wolff, M.D. Philadelphia, J. B. Lippincott Company. 1944. Reprinted from *Clinics*, April, 1944; Vol. II, No. 6. Cloth.

Fertility in Woman. Causes, Diagnosis and Treatment of Impaired Fertility. By SAMUEL L. SIEGLER, M.D., F.A.C.S., Attending Obstetrician and Gynecologist, Brooklyn Women's Hospital; Attend-

ing Gynecologist, Unity Hospital; etc. With a Foreword by Robert Latou Dickinson, M.D. Philadelphia, J. B. Lippincott Company. 1944. xv-450 pages. 194 illustrations, including 40 subjects in full color on 7 plates. Cloth. Price \$8.00 with Fertility in Men.

Fertility in Men. A Clinical Study of the Causes, Diagnosis, and Treatment of Impaired Fertility in Men. By ROBERT SHERMAN HOTCHKISS, B.D., M.D., Lieutenant Commander, (MC) USNR (on active service); Assistant Professor of Urology, New York University Medical College; Instructor in Surgery (Urology), Cornell Medical College; etc. With a Foreword by Nicholson J. Eastman, M.D. Philadelphia, J. B. Lippincott Company. 1944. xiii-216 pages. Cloth. Price \$8.00 with Fertility in Woman.

Quick Reference Book for Medicine and Surgery. A Clinical Diagnostic, and Therapeutic Digest of General Medicine, Surgery, and the Specialties, Compiled Systematically from Modern Literature. By GEORGE E. REHBERGER, A.B., M.D. Twelfth Edition. 1944. J. B. Lippincott Company, Philadelphia. viii-1460 pages. Illustrated. Cloth. Price \$15.00.

Simplified Diabetic Management. By JOSEPH T. BEARDWOOD, JR., A.B., M.D., F.A.C.P., Associate Professor of Medicine, Graduate School of Medicine, University of Pennsylvania; Physician to the Presbyterian Hospital in Philadelphia; Physician in Chief to Department of Metabolic Diseases, Abington Memorial Hospital, Abington, Pa.; etc. and HERBERT T. KELLY, M.D., F.A.C.P., Associate in Medicine, Graduate School of Medicine, University of Pennsylvania; Associate Physician, Presbyterian Hospital; Chief, Department of Medicine, Doctors' Hospital; etc. Fourth Edition. J. B. Lippincott Company, Philadelphia. 1944. xii-172 pages. Cloth. Price \$1.50.

Plaster of Paris Technique. By EDWIN O. GECKELER, M.D., Associate Professor of Orthopaedic Surgery, and Chief of the Fracture Service, Hahnemann Medical College and Hospital, Philadelphia; Fellow of the American College of Surgeons; etc. Baltimore, The Williams and Wilkins Company. 1944. x-220 pages. Illustrated. Cloth. Price \$3.00.

Malaria. Its Diagnosis, Treatment and Prophylaxis. By WILLIAM N. BISPHAM, Colonel, U. S. Army. Retired. Baltimore, The Williams and Wilkins Company. 1944. viii-197 pages. Illustrated. Cloth. Price \$3.50.

Advances in Pediatrics. Edited by ADOLPH G. DE SANCTIS, M.D. Volume I. New York, N. Y., Interscience Publishers, Inc. 1942. 306 pages. Cloth. Price \$4.50.

The main objective of this book as expressed in its preface is to keep the average physician abreast of pediatric literature in the interval between editions of textbooks. There are nine excellent monographs by contemporary authors covering the main problems in Pediatrics suggested by results obtained from questionnaires sent to leading pediatricians in the United States of America. The last chapter is composed of short abstracts of recent advances as observed by the editor and his co-worker, Dr. George E. Pittings of New York, N. Y.

Titles of the monographs are as follows: Toxoplasmosis, a Recently Recognized Disease of Human Beings; Review of Virus Diseases; Chemotherapy in Diseases of Infancy and Childhood; Electroencephalography; The Role of Vitamin K in Hemorrhage in the Newborn Period; Persistent Ductus Arteriosus and Its Surgical Treatment; The Premature Infant; Tuberculosis; and Endocrinology.

The discussion of each of these subjects is most intriguing and enlightening. Particularly the article on Toxoplasmosis presents something entirely new to practicing physicians. The discussion on the premature infant besides containing valuable information is made more interesting by the fact that it includes no unnecessary technical and laboratory procedures impractical to the practicing physicians. One or two monographs are somewhat overburdened with such data.

On the whole, however, the book would in my opinion be an useful adjunct to any general practitioner and a "must" for every pediatrician.

ISA GRANT.

Radiation and Climatic Therapy of Chronic Pulmonary Diseases. With Special Reference to Natural and Artificial Heliotherapy, X-Ray Therapy, and Climatic Therapy of Chronic Pulmonary Diseases and All Forms of Tuberculosis. Edited by EDGAR MAYER, M.D., F.A.C.P., F.A.C.C.P., Assistant Professor of Clinical Medicine, Cornell University Medical College, New York City; etc. With the Collaboration of Twenty-Two Contributors. The Williams and Wilkins Co., Baltimore. 1944. xiii-393 pages. Cloth. Price \$5.00.

E. Mayer and his twenty-two collaborators, all of them well versed in their respective fields, try in this new book to guide their fellow physicians in evaluating light, x-ray and climatology therapy as applied to all forms of chronic pulmonary diseases and to all forms of non-pulmonary tuberculosis. It is rather regrettable that, probably due to our scanty present knowledge of the basic principles of physical therapy, only the physiologic action of light

has been treated extensively in a separate chapter. The physiologic effects of climate, weather, and altitude are only mentioned as occasional references, mostly of a rather general nature, while any attempt of considering x-ray therapy from a biological point of view is completely missing. However, this is a minor fault since the book has been written for the clinician mainly. All the various chapters contain as a rule not only a rather critical evaluation of an extensive empirical knowledge about the results obtained with the different therapeutical measures under discussion, but also exact technical descriptions for applying these measures for various conditions. The question "surgical vs. conservative treatment" is not only discussed appropriately in most chapters, but two separate chapters are devoted only to this question with special reference to bone and joint tuberculosis. There is no doubt that this new book will help physicians in evaluating critically the various therapeutic claims and in selecting the most appropriate treatment for their patients.

ERNST FISCHER, M.D.

Fundamentals of Psychiatry. By EDWARD A. STRECKER, M.D., Sc.D., F.A.C.P., Professor of Psychiatry and Chairman of the Department, Undergraduate School of Medicine, University of Pennsylvania; Psychiatrist to the Pennsylvania Hospital; Attending Psychiatrist, Psychopathic Division, Philadelphia General Hospital; etc. Second Edition. Philadelphia, J. B. Lippincott Co., 1944. xviii-219 pages. 15 Illustrations. Cloth. Price \$3.00.

This second edition is an excellent introduction to the study of psychiatry. Dr. Strecker has written a book which for brevity, clarity and completeness can hardly be equaled. Especially to be commended is the classification of the various mental illnesses together with the excellent chapter on psychiatry and the war. Of special interest to the student should be the glossary of common terms used in psychiatric practice. This compact book should be of great benefit to the students.

LOUIS KOLIPINSKI, M.D.

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No. 10

Pseudo-Science

"I shall begin, my friends, with the definition of a *Pseudo-Science*. A Pseudo-Science consists of a *nomenclature*, with a self-adjusting arrangement, by which all positive evidence, or such as favors its doctrines, is admitted, and all negative evidence, or such as tells against it, is excluded. It is invariably connected with some lucrative practical application. Its professors and practitioners are usually shrewd people; they are very serious with the public, but wink and laugh a good deal among themselves. The believing multitude consists of women of both sexes, feeble-minded inquirers, poetical optimists, people who always get cheated in buying horses, philanthropists who insist on hurrying up the millenium, and others of this class, with here and there a clergyman, less frequently a lawyer, very rarely a physician, and almost never a horse-jockey or a member of the detective police—I did not say that Phrenology was one of the Pseudo-Sciences.

"A Pseudo-Science does not necessarily consist wholly of lies. It may contain many truths and even valuable ones. The rottenest bank starts with a little specie. It puts out a thousand promises to pay on the strength of a single dollar, but the dollar is very commonly a good one. The practitioners of the Pseudo-Sciences know that common minds after they have been baited with a real fact or two, will jump at the merest rag or a lie, or even a bare hook. When we have one fact found us, we are very apt to supply the next out of our own imagination. (How many persons can read Judges xv, 16 correctly the first time?) The Pseudo-Sciences take advantage of this. I did not say that it was so with Phrenology."

—THE PROFESSOR AT THE BREAKFAST TABLE.

THE Pseudo-Scientists of Oliver Wendell Holmes' day were pikers when compared to the modern ones. They dealt with individuals—albeit multitudes of them—and collected their fees in a retail manner. Now-a-days the Pseudo-Scientists deal with the public wholesale. However, the pattern of thought is the same. The vitamin racket is a case in point. Fortunately these particular Pseudo-Scientists do no more harm than the phrenologists who so riled the Professor at the Breakfast Table. The same can not be said of the glands-of-internal secretion-boys who preceded them, or the makers of the various *hospital endorsed* nostrums who spoil our radio programs.

A more irritating type of Pseudo-Scientists are the ones who tinker with the body politic. The king-cure-all of this type is government control of whatever seems to be out of order, and just now they are focusing their attention on the medical profession. Because more than four million men have been rejected for military service by the Selective Service System, the medical profession is to blame. They do not stop to think, or it does not suit their purpose to consider, that the cause for the greatest number of

rejections was illiteracy, and that education has been under state control for many generations. The second commonest cause was musculoskeletal defects. A recent study of motor fitness of young men entering a midwestern university, showed that 64 per cent could not swim fifty yards, 25.9 per cent could not chin themselves five times, and 24.1 per cent could not jump an obstacle waist high. These freshmen must have attended high school and it is safe to say that most of these high schools were under government control. The third greatest cause for rejection was syphilis, a disease the eradication of which has been a project of the U. S. Government for well nigh a decade.

The rejection rate is approximately 25 per cent, which is about six times that of the old line insurance companies. This rate is too high, but the varying standards that the Army and the Navy have set up are also high. This strict selection has resulted in the best Army and Navy in history. If we are to continue to be a military nation we must do something about the rejectees. Before Pearl Harbor there was no standard American ideal. The *summum bonum* of the average American was certainly not to join the Army and whip the Germans and the Japs. Many high school boys preferred autos and petting parties to calisthenics and athletics, and apparently many Americans did not care to read and write. Even now the continuing strikes would seem to indicate that many do not want to win the war. But none-the-less the 4,108,000 4-F's pose a problem and we must face it as scientists and not as pseudo-scientists.

Sex and Sex Education

THIS very important subject was discussed in a philosophic manner by Dr. John H. Stokes in the July (1944) number of *Venereal Disease Information*. The address merits wider circulation. Dr. Stokes is an expert in this field and to him it is axiomatic that the presence of venereal disease is a measure of the ineffectiveness of sex education. He regards the present time as a critical one for the human problem of sex. Among the factors conducive to excessive and irregular sex activities he discusses the lack of muscular activity necessary to live in modern times; the increase of worry; the thinning and disappearance of clothes; literature of erotic frankness; modern housing, from the glossy model home with a deification of lighting, heating, interior decorating, and laborless household arts at one extreme to the two room flop, with bath, reinforced by the husband-and-wife-and-one-child-or-dog club sedan at the other extreme; the disappearance of juvenility; the loosening of family authority; and the riskless, quick, cheap, painless and near-infallible treatment of venereal disease. No longer are there chores, a two mile walk to school, plowing and chopping wood, to say nothing of breaking ice in the pitcher of a morning. Instead we have hot and cold running water, inner spring mattresses, the sit-down job and the over-size meal. "In the life of today, massive physical weariness obliterating all titillative stimuli from ankles to curvesome lips under a thick pall of muscular exhaustion, forms just no part at all." Moreover, women are subject to the same influences with the result that they are now the aggressors in sex matters. Along with this softening process of modern civilization a prevailing hedonism has replaced all sense of duty as a motivating force in human conduct.

The modern quick easy treatment of venereal diseases may not be free from drawbacks. He quotes Pelouze to the effect that already with gonorrhea the modern cure is proving to be less a device for the control of infection than an incentive to epidemicity through incitement to exposure. Reducing the cost and discomfort of treatment, while assuring the cure of an increasingly high proportion of those who acquire venereal disease, is not enough. One must reach forward somehow into the pre-treatment and extend one's influence into the post-treatment exposure fields. "In other words, we must move against promiscuity rather than, or in addition to, disease."

"If sexual relations lead neither to significant illness nor to unwanted parenthood, only a few intangibles of the spirit remain to guide the children of our science from an outmoded past into an unbridled future."

In the matter of sex education our author waxes sarcastic on the human custom of "passing the buck". The school system is expected these days to do every thing in the name of home, family, intellectual and emotional development. The disposition on the part of the schools to accept the delegated responsibility without protest and the most critical self-examination causes our author anxiety. An educational program must rest upon a scientifically examined and sound factual basis, and the first instructional effort must be expended upon the educator, rather than on the educatee. Sex education as it has been taught, or rather preached, has a certain hypogonad quality. To be effective it must be adapted to local conditions. What is best for school A in system X will not suit school B in system Y. However, there are certain fundamentals that must be kept constantly in mind. The best approach is by way of health education, and character building should be embodied in all instruction. He is an advocate of the old adage "Example is better than precept", and no better example could be found of a break between precept and example than the sex and family conduct of today. Mass instruction is much less effective than conferences with small groups or individuals. These conferences should begin at the pre-adolescent stage, if there be such a stage now. Finally, he questions if teachers as such are the types through which so emotional and unbalanced an affair as average sex conduct should be determined, mediated or "instructed".

Your editor admits belonging to that great class that passes the buck, and therefore has no definite opinion about sex education, other than of its importance. It would seem that the logical place for sex education would be in the course on hygiene and biology. To have a special course would place undue emphasis upon the subject. Reproduction should be discussed on the same plane as digestion and respiration. The importance of fresh air is stressed in the discussion of respiration—why not discuss the importance of a clean sex life when talking about reproduction. The dangers of over-eating must surely be discussed in the chapter on digestion. The same approach should be had in the chapter on reproduction. Hygiene at least could be placed in the school curriculum at the age level that would be suitable for the modern child. A third approach should be at the time of the pre-marital examination. Most states require at least a Wassermann test before a marriage license can be obtained. It seems to us that this is a wonderful opportunity for imparting sex instruction by one who should be the most qualified to give such instruction.

State-Wide Medical Service Plan

IN 1939 the House of Delegates of the Medical Society of Virginia endorsed the idea of a non-profit medical service association for providing care for the low income group similar to the non-profit hospital service associations that were beginning to function successfully. Nothing further on a state-wide basis was done in Virginia although other states, notably California, Colorado, Delaware, Kansas, Massachusetts, Michigan, Missouri, New Hampshire, New Jersey, New York, North Carolina, and Pennsylvania have put such plans in operation.

Recently a group of doctors who have had practical experience with a local plan called a meeting of interested doctors from all over the State to see if a state-wide plan could be established. This movement is so important that we are publishing in full the minutes of the two meetings that have been held (page 538), so that the doctors all over the State may know what is going on.

Societies

Halifax County Medical Society.

At the annual meeting of this Society, Dr. C. B. White of Halifax was elected president for the ensuing year, and Dr. W. L. Eastlack of South Boston vice-president. Dr. Wm. C. Brann of South Boston was re-elected secretary-treasurer.

Lynchburg Academy of Medicine.

Officers of this Society for the current year are: President, Dr. Porter B. Echols; president-elect, Dr. S. O. Handy; vice-president, Dr. H. L. Riley; and secretary-treasurer, Dr. John G. Holland who had shortly before the annual meeting received an honorable discharge from the army. All officers are of Lynchburg.

The Virginia Peninsula Academy of Medicine

Began its Fall meetings on September 18 at the Coca-Cola Recreation Hall in Newport News. The guest speaker was Dr. Marion Lawrence White, Jr., Associate Professor of Surgery at the University of Virginia. He spoke on "Surgical Treatment of Non-tuberculous Lung Diseases" which was illustrated by x-ray and lantern slides.

The Academy meets the third Monday of each month from September through May. Dr. Frank A. Kearney and Dr. Robert H. Wright, Jr., both of Phoebus, are president and secretary, respectively.

News

Richmond Welcomes The Medical Society of Virginia For Its Annual Convention

October 23, 24 and 25

Headquarters—John Marshall Hotel

University of Virginia, Department of Medicine.

Commencement exercises for the graduating classes at the University have been much curtailed for the duration. However, we give herewith names of graduates in medicine with hospital appointments, finals having been held on September 14:

UNIVERSITY OF VIRGINIA HOSPITAL, Charlottesville—Drs. Nathan Edward Adamson, Jr., Portsmouth; Robert Eugene Balsley, Reidsville, N. C.; Walter Randolph Chitwood, Wytheville; Stanton Lee Eversole, Vincent, Ala.; Herbert PinCUS Friedman, Jr., Virginia Beach; MacRoy Gasque, Jr., Charlottesville; Lucius Davis Hill, III, San Antonio, Tex.; Parker Hall Lee, Jr., Lynchburg; Hunter Reece Mann, Jr., Salisbury, Md.; Karl Ferdinand Menk, Holden, W. Va.; Isadore Shapiro, Norfolk; Morton Jack Silk, Bayonne, N. J.; William Price Spencer, Baltimore, Md.; Daniel

Doak Talley, III, Richmond; Peter Ambrose Wallenborn, Jr., Charlottesville; and Joseph Percivall Whittle, Petersburg.

MEDICAL COLLEGE OF VIRGINIA HOSPITAL, Richmond—Drs. Arthur Baldwin Duel, Jr., and Robert Kinnaird, Jr., Danville, Ky.

NORFOLK NAVAL HOSPITAL, Portsmouth—Drs. Robert Louis Anthony Keeley, Roanoke; and Charles Hamilton Lupton, Jr., Norfolk.

U. S. NAVY HOSPITAL, N.O.B., Norfolk—Dr. Robert Holcombe Morrison, Petersburg.

ST. LUKE'S HOSPITAL, Bethlehem, Pa.—Drs. Woodland Ward Anderson, Jr., Newport News; John Harmon Beverage, Monterey; and Thomas Newman Davis, III, Lynchburg.

GERMANTOWN HOSPITAL, Philadelphia, Pa.—Dr. Bennett Rudolph Creech, Raleigh, N. C.

NEW YORK POST-GRADUATE HOSPITAL, New York, N. Y.—Dr. Geoffrey Herman Binneveld, Leesburg, Fla.

NEW YORK CITY HOSPITAL, New York, N. Y.—Drs. Irving Bornstein, Bedford; Richard Alsop Gilbert, Charlottesville; and Norman Goldfarb, Brooklyn, N. Y.

- BELLEVUE HOSPITAL, New York, N. Y.—Drs. James Leonidas Camp, III, Franklin; and Harry James Perlberg, Jersey City, N. J.
- HARLEM HOSPITAL, New York, N. Y.—Dr. Fred Coleman Mackler, New York, N. Y.
- FORDHAM HOSPITAL, New York, N. Y.—Dr. Bernard Randolph Siegel, Newport News.
- STRONG MEMORIAL HOSPITAL, Rochester, N. Y.—Dr. Charles Granville Craddock, Jr., Lynchburg.
- U. S. NAVY HOSPITAL, St. Albans, L. I., N. Y.—Dr. John Roy Gregory, Charlottesville.
- U. S. NAVY HOSPITAL, Brooklyn, N. Y.—Dr. Joseph Tedford McFadden, Oxford, Miss.
- CUMBERLAND HOSPITAL, Brooklyn, N. Y.—Dr. Sidney Cohn Reichman, Charlottesville.
- LONG ISLAND COLLEGE HOSPITAL, Brooklyn, N. Y.—Dr. Edward Alton Tyler, Portsmouth.
- U.S.P.H.S., New Orleans, La.—Drs. Irwin Monroe Boozer, Anniston, Ala.; and Courtland Harwell Davis, Alexandria.
- SHREVEPORT CHARITY HOSPITAL, Shreveport, La.—Drs. Barry Fugh Hawkins, Charlottesville; and John McCluer Mimms, Ocala, Fla.
- TOURO INFIRMARY, New Orleans, La.—Dr. Ben Newton Walker, Jackson, Miss.
- JOHN SEALY HOSPITAL, Galveston, Tex.—Drs. Charles Bunyan Bray, Jr., Birmingham, Ala.; and Royal Eppes Stuart, Charlottesville.
- U. S. NAVY, Newport, R. I.—Drs. Edward Leslie Cole, Jr., St. Petersburg, Fla.; William Michael Brock, Gairfield, Ala.; and Cary Nelson Moon, Jr., Scottsville.
- U.S.P.H.S.(MARINE HOSPITAL), Baltimore, Md.—Dr. Alvin Lafayette Cain, Fairmont, W. Va.
- U. S. NAVY HOSPITAL, Bethesda, Md.—Drs. Guy Otis Keller, Buena Vista; Alva Denton Orr, Glade Spring; and Gordon Clark Gregory Thomas, Charlottesville.
- U. S. NAVY HOSPITAL, Annapolis, Md.—Dr. James William Loynd, II, Tarentum, Pa.
- UNION MEMORIAL HOSPITAL, Baltimore, Md.—Dr. Benjamin Franklin Montague, Jr., Charleston, W. Va.
- JOHNS HOPKINS HOSPITAL, Baltimore, Md.—Drs. Macey Herschel Rosenthal, Lynchburg; and Graham Alexander Vance, Bristol, Tenn.
- GOOD SAMARITAN HOSPITAL, Cincinnati, Ohio.—Drs. George Marion Cooper, Jr., Raleigh, N. C.; and John Peter Wissinger, Philadelphia, Pa.
- MIAMI VALLEY HOSPITAL, Dayton, Ohio.—Dr. Abraham Julian Gabriele, Norton.
- LAKESIDE HOSPITAL, Cleveland, Ohio.—Dr. Darius Flinchum, Willis.
- METHODIST HOSPITAL, Memphis, Tenn.—Dr. Guy Walker Dean, Shaw, Miss.
- BARONESS-ERLANGER HOSPITAL, Chattanooga, Tenn.—Drs. Charles Mayo Garland, Jr., Dillwyn; and Edwin Snead Wysor, Clifton Forge.
- BAPTIST MEMORIAL HOSPITAL, Memphis, Tenn.—Dr. Grattan Howard Tucker, Chase City.
- HILLMAN HOSPITAL, Birmingham, Ala.—Drs. John Edward George, Roanoke; and Carlos James Ross, Phillips, Me.
- DELAWARE HOSPITAL, Wilmington, Del.—Dr. Douglas Oliver Kern, Charlottesville.
- EVANS HOSPITAL, Boston, Mass.—Dr. William Berry Marbury, Jr., Washington, D. C.
- GOOD SAMARITAN HOSPITAL, Lexington, Ky.—Dr. Silas Mercer Moorman, II, New York, N. Y.
- VIRGINIA MASON HOSPITAL, Seattle, Wash.—Drs. Randolph Preston Pillow, Roanoke; and Henry Adolphus Wiseman, III, Danville.
- HARPER HOSPITAL, Detroit, Mich.—Drs. James Given Snead, Covington; and John Elmer Zearfoss, Jr., Alexandria.
- CHARLESTON GENERAL HOSPITAL, Charleston, W. Va.—Dr. Jesse Oliver Van Meter, Jr., Jackson, Ky.
- ST. LOUIS CITY HOSPITAL, St. Louis, Mo.—Dr. Charles William Vivian, Phoenix, Ariz.
- U. S. NAVY HOSPITAL, Great Lakes Training Station, Ill.—Dr. William Dunn Walker, Charleston, W. Va.

Virginia Obstetrical and Gynecological Society.

Following its luncheon on October 24, there will be an open meeting of the Virginia Obstetrical and Gynecological Society, in the Washington Room at Hotel John Marshall, Richmond, at 2:15 P. M. All physicians interested in the study of maternal deaths are invited. The Committee on Maternal Health will review several reports of these deaths and show the method of determining conclusions.

The Virginia Society of Chest Physicians

Will be entertained at luncheon at Pine Camp Hospital, on the last day of the State Society meeting in Richmond—October 25. Following luncheon, Dr. Herman E. Hilleboe, Surgeon-in-Charge of the Tuberculosis Control work of the United States Public Health Service, will give an outline of the Tuberculosis program.

American College of Surgeons Cancels Congress.

The American College of Surgeons, upon action of its Board of Regents, has canceled its Annual Clinical Congress which was to have been held in Chicago, October 24-27. This has been done because of the acute war situation that has developed, involving greater demands than at any time in the past upon transportation systems for the carrying of wounded personnel, troops and war material.

At the annual meeting of the Board of Regents which will be held later in the year, fellowship in the College will be conferred *in absentia* on the class of initiates of 1944, as there will be no Convocation exercises.

All present officers, regents, governors and standing committees will continue in office.

Southern Medical Association.

The St. Louis meeting of this Association will be held November 13-16. There will be more of a scientific program than last year but not quite so much as in pre-war years. Clinical sessions will begin on Monday afternoon, continuing until noon Tuesday, following which the programs of the twenty sections will be presented. There will be no official social activities this year, it being felt that it would be sufficient entertainment to have a few days of respite from personal medical responsibilities. Hotels are filling up rapidly—if you plan to go, reservations should be made at once.

Dr. Fred J. Wampler

Has resigned as professor of Preventive and Industrial Medicine at the Medical College of Virginia to accept a position in Baltimore as head of the medical department of a large industry, his resignation being effective October 1. Before coming to the College in 1928, he had been a medical missionary in China, and in 1930 and 1931 studied

public health in mission and government hospitals in India, Burma and Japan. Dr. Wampler has been chairman of the Industrial Health Committee of the Medical Society of Virginia since its first appointment in 1938.

Change From Local to State Health Department.

Dr. Glenn H. Baird, who has since July, 1942, been venereal disease control officer with the Richmond City Health Department, recently resigned this position to accept one with the State Health Department. He assumed his new duties on August 31.

Health District Enlarged.

By direction of the Commissioner, effective as of September 1, 1944, the Southeast Health District, which has heretofore comprised the Counties of Norfolk, Princess Anne, Isle of Wight, Nansemond, and Southampton, has been enlarged to include Northampton, Brunswick, Greensville, Mecklenburg, Prince George, Sussex, Dinwiddie, Warwick, James City, York and Elizabeth City Counties under the administrative jurisdiction of Dr. J. C. Neale, Jr.

Waynesboro Community Hospital.

At the annual meeting of the Hospital staff, the latter part of August, Dr. George H. Kinser was elected president for the coming year, succeeding Dr. D. E. Watkins. Others elected to offices are: Dr. C. C. Freed, vice-president; Dr. David W. O'Brien, secretary; and Dr. Ernest Mosby, treasurer.

Dr. Mason Romaine,

Who has been Health Officer of Petersburg since 1931 and has served full time in this position since 1941, has been granted leave of absence by the City of Petersburg to pursue a course at the Johns Hopkins School of Hygiene and Public Health, leading to the degree of Master of Public Health. He will continue to supervise the Petersburg Health Department by frequent week-end visits and will return at the end of the course to resume his full time duties.

Dr. L. R. Broome,

Who was for sometime on the staff of Catawba Sanatorium, resigned that position late in May and, after a short time in Illinois, has accepted a position on the staff of Pinecrest Sanitarium at Beckley, W. Va.

Dr. Cecil G. Hupp,

Who graduated from the Medical College of Virginia in March, 1943, has completed his tenure as resident physician at Arlington (Va.) Hospital, and is entering the Army on October 7.

The American Association of Obstetricians, Gynecologists and Abdominal Surgeons

Held its fifty-sixth annual meeting at Hot Springs, Va., September 7-9, with an unusually large attendance. Dr. Willard R. Cooke of Galveston presided. It was voted to meet again at Hot Springs in 1945. Dr. Lewis Frederic Smead of Toledo was installed as president and the following officers elected for the ensuing year: President-elect, Dr. Archibald D. Campbell of Montreal, Canada; vice-president, Dr. Emil Novak of Baltimore; secretary, Dr. J. R. Bloss of Huntington, W. Va.; assistant secretary, Dr. L. A. Calkins of Kansas City, Kansas; and treasurer, Dr. Ward F. Seeley of Detroit. The last three were re-elected.

Dr. C. C. Fabric,

Formerly of Radford, is now affiliated with the National Red Cross and is serving as Acting Director of the Medical and Health Service of the Eastern Area, with headquarters in Alexandria.

Dr. James W. Reed

Was recently elected as chairman of the Norfolk City Council and ex officio Mayor. He has been a member of the Council since 1931 and in 1940 was elected as vice-chairman. Dr. Reed is an alumnus of the Medical College of Virginia.

Refresher Course.

The Medical College of the State of South Carolina will hold its third annual Refresher Course on November 1-3 in Charleston. A variety of subjects will be discussed, including general medicine and all specialties. Further information with regard to this course may be obtained from Dr. J. I. Waring, Chairman, 82 Rutledge Avenue, Charleston 6.

New Convalescent Hospital at Fort Story.

The Third Service Command's first convalescent hospital—third in the country—has been opened at Fort Story, six miles from Virginia Beach. This hospital will take up treatment of soldiers where general hospitals left off. Colonel Howell Brewer,

MC., will be commanding officer with a staff of 20 medical officers. There will be no nurses as no bed patients are admitted. There are, however, adequate facilities on the post for full medical, surgical, and dental treatment. Athletic and physical training take place in the open whenever possible. There are spacious baseball fields, tennis courts and parade grounds. The hospital is designed to shake off the last vestiges of the soldier's injuries and get him back into top trim through exercise, reconditioning and good care.

Married.

Dr. Walter Randolph Chitwood, graduate of the September class at the University of Virginia and son of Dr. and Mrs. E. M. Chitwood of Wytheville, and Miss Ruth Anne Reed of Willis, September 18. Dr. Chitwood is interning at University Hospital, beginning October 1.

Dr. Geoffrey Herman Binneveld of Leesburg, Fla., and Miss Ellen May Whitt of Yalaha, Fla., September 15. Dr. Binneveld is also a member of the September class of the University of Virginia, and will serve his internship at the New York Post-Graduate Hospital.

Martinsville to Have New Hospital.

A new General Hospital is to be built in Martinsville with the aid of a grant of federal funds as an emergency wartime measure. The government has allotted \$602,000 for the construction of an 80-bed hospital and 40-bed nurses' home. Twenty of the beds are for colored patients. Construction will start as soon as all the bids are in and the contract has been let. Dr. John Shackelford has announced his intention of closing the Shackelford Hospital as soon as the new Martinsville General Hospital opens, and the old hospital, which has served that community for many years, will be converted into business property. The new hospital will fill a need which Martinsville has felt acutely for a good many years. It will be operated as a non-profit corporation under the direction of a board of trustees composed of prominent citizens of Martinsville and Henry County.

The West Virginia State Medical Association

Announces that its 1945 annual meeting will be held at Clarksburg, May 14 and 15. The Waldo,

Stonewall Jackson and Gore have been designated as convention hotels. The exhibits and scientific sessions will be at the Waldo.

Dr. Catherine W. R. Smith,

Who was for a time in Abingdon with the Smyth-Washington-Bristol Health District, has been transferred to Columbus, Ga., where she is still serving as Acting Assistant Surgeon, U. S. Public Health Service. While in Columbus she will serve as pediatrician for the Muscogee County Health Department. She expects later to return to Virginia.

Basic Science Board Appointed.

The Special Board of Examiners in Basic Science, created by the 1944 General Assembly, to conduct examinations of applicants for licenses to practice the healing arts in Virginia, has been announced by Governor Darden as follows: Dr. Frank L. Apperly, professor of pathology at the Medical College of Virginia; Dr. Carl C. Speidel, professor of anatomy at the University of Virginia; and Dr. L. J. Desha, professor of chemistry at Washington and Lee University. The tenure of the Board is five years.

Dr. Paul J. Bundy,

Recently of Tazewell, has moved to Dante where he is connected with the medical department of the Clinchfield Hospital.

Dr. A. L. Herring, Jr.,

Richmond, after completing an intensive training in general surgery at the Lahey Clinic, Boston, is now associated with Dr. A. L. Herring, Sr., at Grace Hospital, in general surgery.

New Books.

The following are recent additions to the Library of the Medical College of Virginia and are available to our readers, under usual library rules:

- A.M.A.—New and nonofficial remedies. 1944.
 Armstrong, H. G.—Principles and practice of aviation medicine. 2nd ed. 1943.
 Barach, A. L.—Principles and practices of inhalation therapy.
 Beck, A. C.—Obstetrical practice. 3rd ed. 1942.
 Berman, Louis—Behind the universe: a doctor's religion.
 Bodmer, F.—The loom of language.
 Cole, W. H.—Textbook of general surgery. 4th ed. 1944.
 Friedman, R.—Biology of *Acarus Scabiei*.
 Goldring, Wm. & Chasis, H.—Hypertension and hypertensive disease. 1944.
 Gregg, A. L.—Tropical nursing.

- Greenwood, Major—Authority in medicine: old and new. 1943.
 Harned, H. S., and Owen, B. B.—The physical chemistry of electrolytic solutions. 1943.
 Herms and Gray—Mosquito control. rev. ed.
 Hotchkiss, R. S.—Fertility in men. 1944.
 Jacobs, Morris B. ed.—The chemistry and technology of food and food products. 1944.
 Jensen, F., and others—Medical care of the discharged hospital patient. 1942.
 Judson, J. A. V.—Handbook of colour. 1938.
 Kraines, S. H.—Therapy of the neuroses and psychoses. 2nd ed. 1943.
 Landolt-Börnstein—Physikalisch-chemische tabellen . . . 8 vols. 1923-1943cp.
 MacBryde, C. M. ed.—The analysis and interpretation of symptoms. 1944.
 McLester, J. S.—Nutrition and diet. 4th ed.
 Maternity Center Association—Public health nursing in obstetrics. Part I.
 Mayer, Edgar ed.—Radiation and climate therapy of chronic pulmonary diseases. 1944.
 Menninger, K., and Menninger, J. L.—Love against hate.
 Nedzel, A. J.—Vascular spasm: experimental studies. Vol. III, Nos. 3-4, 1943.
 Nord, F. F. ed.—Advances in enzymology. Vol. IV. 1944.
 Osler—Principles and practice of medicine. 15th ed.
 Preston, G. H.—The substance of mental health. 1943.
 Selye, Hans—ed.—An encyclopedia of endocrinology. Section I. The Steroids. (Pub. in 4 vols.)
 Shapley Harlow—A treasury of science. 1943.
 Siegler, Samuel L.—Fertility in women. 1944.
 Soper, F. L., and Wilson, D. B.—Anopholes Gambiae in Brazil. 1930 to 1940.
 Stern, Frances—Applied dietetics. 2nd ed. 1943.
 Stieglitz, Edward J. ed.—Geriatric medicine. 1943.
 Strecker, Edward A.—Fundamentals of psychiatry. 2nd ed. 1944.
 Tanner, F. W.—Microbiology of foods. 2nd ed.
 Truslow, Walter—Body poise. 1943.
 Virginia State Board of Education—Course of study for Virginia Elementary schools. Grades I-VII.
 Warren, Shields—The pathology of diabetes mellitus. 1938.
 Williams-Heller, Annie, and McCarthy, J.—Soybeans—from soup to nuts. 1944.
 Winton, A. L., and Winton, K. B.—The structure and composition of foods. Vol. IV, 1939.
 Yater—Fundamentals of internal medicine. 1944.

Symposium on Nutrition.

In addition to the program for the Medical Society of Virginia, as announced in the September MONTHLY, there will be held a Symposium on Nutrition on Tuesday afternoon, October 24, from 3:00 to 5:00 o'clock. This is sponsored by the Medical College of Virginia and will be held in the Egyptian Building of the College. Dr. William H. Higgins

has arranged the program for the College, and, for the leader, has secured Colonel John B. Youmans, M.C., Professor of Medicine at Vanderbilt University, Nashville. Colonel Youmans is at present at the Surgeon General's Office in Washington, as Director of the Nutrition Division of Army Service Forces. The program follows:

1. Colonel Youmans—Introductory Outline of Symposium.
2. Dr. William B. Porter, Professor of Medicine—Nutrition in Relation to Medicine.
3. Dr. Everett I. Evans, Associate Professor of Surgery—Nutrition in Relation to Surgery.
4. Dr. Lee E. Sutton, Jr., Professor of Pediatrics—Nutrition in Relation to Pediatrics.
5. Dr. I. C. Riggin, State Health Commissioner—Nutrition in Prevention and Industrial Medicine.
6. Colonel Youmans—Summary of Objectives in Nutrition.

Plan to attend this session. It promises much of interest.

Obituaries

Dr. James Reginald Bailey,

Keysville, died September 15 after a short illness, having apparently been in good health to a short time before his death. He was forty-three years of age and a graduate in medicine from the Medical College of Virginia in 1926. After a year as intern at the former Memorial Hospital, Richmond, he located in his home town where he had since practiced. He joined the Medical Society of Virginia the year after graduation and was secretary of his local organization. His wife, daughter and mother survive him. A brother is Dr. B. Herman Bailey of Sandston.

Capt. John Edward Fissel, Jr.,

At the regular meeting of the Riverside Hospital Staff, on September 13, 1944, the following resolutions were adopted:

It is with deep regret that the Riverside Hospital Staff learned of the death of Dr. John Edward Fissel, Jr., who had served as the Hospital's first intern and later practiced in the city of Newport News.

Dr. Fissel was born February 6, 1912, in Baltimore, Maryland, was graduated from the University of Mary-

land College of Arts and Science, received his medical degree from the Maryland School of Medicine in Baltimore. He served one year internship at the Church Home and Infirmary, Baltimore, and two years at the Riverside Hospital in Newport News, Virginia.

Dr. Fissel volunteered on September 1, 1942, in the service and at the time of his death was a Captain in the medical air evacuation squadron of the army, bringing wounded troops from England to New York.

He was a member of the Medical Society of Virginia and the American Medical Association.

The Staff of the Riverside Hospital wishes to extend their deep sympathy to his bereaved mother and to express to her their sincere appreciation of Dr. Fissel as a doctor and a friend.

It is resolved that a copy of these resolutions be sent to his mother, the Medical Society of Virginia, and spread on the minutes of the Riverside Hospital Staff.

W. O. POINDEXTER

E. B. MEWBORNE

W. S. SNEAD, *Chairman*

Lt. (jg) Charles Herbert Henderson, Jr.,

MC., USNR., of Bonny Blue, was killed in action off the coast of France on June 12. He was twenty-five years of age and received his medical degree from the University of Virginia in 1943. His father is Dr. C. H. Henderson, also of Bonny Blue.

Dr. Robert Bennett Bean,

For twenty-five years professor of anatomy at the University of Virginia, died August 27. He was seventy years of age and a graduate of Johns Hopkins University School of Medicine in 1904. His wife and four children survive him.

Dr. Charles Matthew Scott,

Bluefield, W. Va., died August 17, of pneumonia. He was sixty-five years of age and a graduate of the former University College of Medicine, Richmond, in 1901.

Dr. Minor Carson Lile,

Seattle, Washington, died September 3 at the age of fifty-five. He was a native of Lynchburg and graduated in medicine from the University of Virginia in 1914. Dr. Lile served as Captain in the medical corps in World War I, being attached to the University of Virginia Base Hospital 41. After the war he moved to Seattle, where he was a member of the staff of the Virginia Mason Clinic. His wife and six children survive him.

THREE IMPORTANT MEN IN MEDICAL CARE OF THE EYES



THE GENERAL PRACTITIONER

The general practitioner is one of the triumvirate who care for the eyes. He knows that eye strain may be one of the causes of ocular discomfort, nerves, and headaches. When an eye examination seems advisable, or when glasses are essential for eye and general health, improvement of vision, and relief of muscular disorders, he directs his patient to an eye physician. The general practitioner knows the difference between a medical and non-medical eye examination.



THE EYE PHYSICIAN

The eye physician has dedicated his life to careful examination and care of ocular disorders, but he always considers them in relation to general health because he is a medical graduate. He is sometimes able to increase eye comfort and efficiency without prescribing glasses, or he may suggest that they be used only occasionally. When he prescribes glasses he is careful to see that his prescription is accurately filled so that the patient receives the maximum benefit from his glasses.



THE GUILD OPTICIAN

The guild optician, in turn, is a craftsman who, from the eye physician's prescription plan creates glasses of which the eye physician and general practitioner can be proud.

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GUILD OPTICIAN } = GOOD EYE CARE

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*R. H. Follis, D. Jackson, M. M. Eliot, and E. A. Park: Prevalence of rickets in children between two and fourteen years of age, *Am. J. Dis. Child.* 66:1-11, July 1943.

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Virginia

MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

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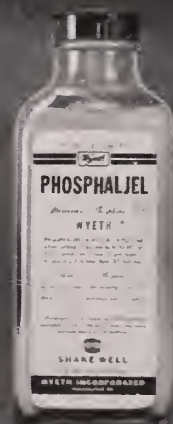
These striking experimental results led to the use of Phosphaljel in the treatment of peptic ulcer in man (1,2,3,4,5) and disclosed its special value in those cases of peptic ulcer associated with a relative or absolute deficiency of pancreatic juice, diarrhea, or low phosphorus diet (1).

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Guest Editorial

Rural Medical Care

AT a State meeting of a Virginia farm organization a few years ago there was strong support of a resolution requesting the Legislature to reduce by law the length of the course for medical students. This resolution sprang from a belief that a reduction in the cost of medical education might result in more doctors and a lowering of charges. Misguided ignorance, you say. Certainly, but an indication of a real problem. These farm representatives knew, many of them through bitter personal experience, that with the passing of the old open-country doctors, it is becoming increasingly hard for country people to secure needed medical care promptly and at a cost in keeping with their meager income. Such conditions finally prompted the Virginia Farm and Home Organizations, representing about 50,000 farm families, to unitedly request the Legislature to set up a commission to make a thorough study of rural health and medical care problems. After such a request had been turned down at two succeeding sessions of the Legislature, the Virginia Federation of Home Demonstration Clubs, an organization of about 25,000 farm women, asked the Division of Rural Sociology of the Virginia Agricultural Experiment Station to make the desired study. The first step in this undertaking was the formation of a Sponsoring-Advisory Committee composed of officially appointed representatives of the Medical Society of Virginia, the two Medical schools, the State Department of Health and other State agencies concerned with rural life, and the Statewide farm and home organizations. The first chairman of this Committee was Dr. John Hundley, the Medical Society representative, who, after he went into the Army, was succeeded by Dr. J. R. Gorman, and then the present chairman, Dr. H. B. Mulholland. The Executive Committee of this group includes besides the Chairman, Dr. H. B. Mulholland, Assistant Dean, University of Virginia Medical School, President W. T. Sanger, Medical College of Virginia, Dr. L. J. Roper, State Department of Health, Mr. Raymond Long, Director State Planning Board, and W. E. Garnett, Virginia Agricultural Experiment Station.

Before the Experiment Station study could get under way, the many questions related to the medical care of the indigent prompted the State Department of Public Welfare and the State Department of Health to ask the U. S. Public Health Service to make a study of Virginia's "Medically Needy", and related medical services. Dr. Louis S. Reed, who had charge of this undertaking, asked that his work should be considered a part of the program of the Sponsoring Committee of the rural Health and Medical Care Study. The field work for both studies was begun in the summer of 1941, but the completion of reports has been delayed by war conditions. Final reports will be published shortly by the U. S. Public Health Service and the Virginia Agricultural Experiment Station. Several progress reports have been issued, which are available

for the asking from the Division of Rural Sociology, Virginia Agricultural Experiment Station, Blacksburg, Virginia.

As the rural Health and Medical Care Study neared completion, it became evident that remedial measures for at least part of the undesirable conditions would depend on State action. Accordingly the Governor and the 1944 Legislature were asked to provide for a committee of the Legislative-Advisory Council to consider problems of rural health and medical care. Such a committee is being appointed under the chairmanship of the Hon. Charles R. Fenwick of Arlington County.

RURAL MEDICAL CARE NEEDS

Thoughtful observers of trends in the medical world, especially those close to the rural situation, have long known that rural people are not generally receiving the full benefits of advancing medical science and techniques and that the system of medical care for rural people is not being sufficiently adapted to the changing situation. The findings of the studies in question are, therefore, not especially new to such observers. However, they serve to bring certain Virginia conditions into sharper focus. Among the more significant of such conditions are:

The Poor Distribution of Doctors—According to the 1942 Medical Directory, there are now less than 2,000 effective practicing physicians in Virginia or a ratio of approximately one doctor to 1,365 people. This is not so bad if they were evenly distributed. In 11 rural counties, the number of effective doctors is one to over 7,000 population as compared to a ratio in 1940 of around one doctor to 520 people in the cities and one to 720 in the cities and city-counties together. With the tendency for doctors to concentrate in cities and towns, many thousand rural families are now a long distance from a doctor. Where the charge is \$1.00 per mile, as is customary with many town doctors, many rural families have to pay from \$5 to \$10 or even more for a home visit.

Cost of Medical Care Out of Proportion to Farm Incomes—Reports from approximately 2,400 widely distributed rural Virginia families in 1941-42 indicated an average expenditure for all types of medical care of around \$60 per year, with about 90 per cent having some type of medical care expenditure. A detailed report from 632 of these families showed average expenditures for given items as follows:

Doctor	\$23—401 families	63%	Hospital	\$114— 89 families	14%
Nurse	\$25— 30 “	5%	Eye Ex. & Glasses..	\$ 21—167 “	26%
Dental Work	\$19—311 “	49%	Drugs	\$ 10—397 “	63%

For the country as a whole, approximately one person in 10, is reported to have hospital treatment each year, with 47.7 per cent of hospital admissions for operations. In 1929 the medical care dollar was reported to have been spent as follows:

Physicians	29.8%	Hospitals	18.2%	Drugs	18.2%
Nurses	5.5%	Dental Work	12.2%	Other purposes	7.6%
		Public Health	3.3%		

The average net farm income of Virginia farm operators in 1939 was reported at \$463. The average yearly income of the State's approximately 50,000 farm wage earning families was even less. In 1939 approximately three Virginia farm operators in five had a gross farm income of under \$600, but this does not cover earnings from nonfarm work received by about one-third. Gross farm incomes include the value of home produced supplies, exclusive of rent, and also the expenses of farm operation. Farm incomes have increased somewhat since 1939 but such increases are in part offset by increased cost.

Rural Doctors Make Insufficient Incomes—Even though the cost of medical care is excessive for many meager income rural families, reports from 231 rural doctors showed the annual net professional income of over half as averaging less than \$3,000 per year. No wonder doctors go to urban centers where they can make incomes more in keeping with their expensive training and where they can have many advantages lacking in the average rural community.

Rural People Frequently Go Without Needed Medical Care—The scarcity of doctors and the high cost of medical care has resulted in a tendency for rural people to have a doctor only in case of extreme necessity. Thus, reports from 1,739 white and 767 Negro families indicated that, because of the cost, one in 14 of the white and one in 4 of the Negro families did not have a doctor when he was thought to be needed, while one in 20 of the whites and one in 7 of the Negroes did not have needed operations or hospital care for the same reason. The poorer families reported much more incapacitating sickness than those of higher income, but smaller expenditures for medical care. The number of poorer families reporting some form of chronic ailment was astonishingly high. Many such ailments appeared to be traceable to the cumulative consequences of inadequate medical care when needed. Most rural doctors can cite a number of such cases.

Unfavorable Virginia Showing—Although Virginia has made great strides in its public health work and other phases of medicine, this State still makes an unfavorable showing in comparison with the country as a whole in a number of items. Thus in 1940 for live birth children under one year of age, Virginia's death rate was 8 above the national average, with 31 states making a better showing in this significant index of health care. In the same year, Virginia's death rate for all forms of tuberculosis among whites was 12.2 above the national average with 40 states having a lower rate.

The country generally has been startled and disturbed by the high percentage of prospective soldiers rejected because of physical defects. Full state comparisons in this regard are not yet available for the present draft. However, in the First World War, Virginia was in the three states with the highest rate of total defects for the 20-odd points covered by the examination. Virginia's poor showing in these items is not altogether due to the lack of adequate medical care but is in part due to unfavorable living conditions. Approximately 100,000 white Virginia rural families have marginal standards in regard to income, education, housing and other living conditions—families which are producing at least one-third more children than an equal number with higher standards. A recent study of the diets of 5,000 Virginia school children showed one-third to be 50 per cent or more below accepted standards for essential foods.

IMPROVEMENT MEASURES

The following principles are being used as a guide by the Sponsoring-Advisory Committee of the Virginia Rural Health and Medical Care Study in its efforts to develop measures for improvement of the rural medical care situation:

The benefits of modern medical knowledge and techniques should be made available to all people regardless of place of residence or income status. The attainment of this end involves evolution to broader concepts of medical care. Adequate medical care and good health, like minimal standards of education, are of sufficient social importance to justify such action as may be necessary to insure such minimal care.

Regardless of how provided, all families wherever possible should make a reason-

able contribution to the cost of their medical and hospital care, and all hospital insurance and medical care plans should be on a sound actuarial basis.

Any medical care and hospitalization plans used should not violate the principle of direction by competent medical authority or of accepted standards of doctor-patient relations.

The distribution of doctors is of fundamental importance to the solution of the problem of adequate rural medical care. A distribution of doctors adapted to rural needs is dependent upon (a) young doctors trained in modern laboratory techniques having hospital connections, or other suitable access to needed equipment without excessive cost; (b) more stimulating professional associations, and (c) assurance of a reasonable income.

Improvement in the rural medical care situation had best come through an experimental evolutionary process rather than attempts to change medical procedures all at once. It cannot be entirely separated from other related situations and problems.

Among the specific measures recommended by the Committee are:

That the State employ outside experts, possibly through aid from the U. S. Public Health Service, to make a study of the needs of new hospital centers, especially in areas not now properly served by existing hospitals, such experts to work in conjunction with local leaders.

That the Commonwealth of Virginia establish upon expert advice, a plan for hospitalization adapted to the needs of lower income groups. It is thought that increased State and county support will be necessary in any adequate plan.

That pending the development of a more comprehensive plan for rural medical and hospital care all possible encouragement be given to the extension of hospital insurance and prepaid medical care plans among rural people of the more favored income groups. Most available hospital insurance plans, except that of the Farm Security Administration sponsored Virginia Farmer's Health Association, are too costly for the average farm family.

The Committee also recommended that there be a vigorous campaign of public opinion education as to (a) the facts regarding the rural medical situation as revealed by the research studies (b) possible improvement measures, and (c) factors to be taken into account and the difficulties to be overcome in developing improvement measures and getting them into operation.

A committee headed by Mrs. Ben Wailes of Sweet Briar, representing over a dozen Statewide organizations, already has plans under way for such a public opinion campaign to be concentrated in May, 1945. The supporting State organizations have over 2,000 community locals which are expected to devote at least one meeting to questions related to better rural health and medical care. It is hoped all the local medical societies of the State will do likewise.

W. E. GARNETT, PH.D.

EDITOR'S NOTE.—Dr. Garnett is Rural Sociologist with the Virginia Agricultural Experiment Station at Blacksburg, Virginia, and Director, Virginia Rural Health and Medical Care Study.

PHYSICIANS, WAKE UP!*

C. B. BOWYER, M.D.,
Stonega, Virginia.

INTRODUCTION

As the world's greatest drama of war approaches a successful climax and plans for the peace are being made, there is now much to be done in the transition from war-time to peace-time, to make a better, happier world, focused around social security, freedom from want, adequate health service for all, to justify the great sacrifice America has made.

In this new trend of thinking, social planners feel strongly that medicine should be so reorganized and so regulated, by Federal legislation if necessary, as to provide a better distribution of medical care for all at lower cost, on some universal pre-payment plan. A little over a year ago President Roosevelt said, "for all our citizens we should provide a further measure of social security in order to protect them against certain continuing hazards of life." Following this statement various Federal agencies have proposed plans. When analyzed all of these plans seem to indicate that the agencies drawing them are more interested in having their particular plans adopted than they are in the successful, lasting benefit of such plans as they affect our people as a whole. With all of the social thinking and planning following the horrors, suffering, and devastation of a global war, the American public is becoming increasingly social security conscious. Our law makers are acutely aware of this awakening on the part of the public and many legislative "cure-alls" are being suggested. The one in which we as physicians are the most interested is the plan to regiment the medical profession. That we do have serious problems facing the profession no one can deny but Federal legislation, enormous money spending programs, and added taxation is not the answer. From earliest records of man there has always been insecurity, poverty, and disease, and regardless of any program there always will be. However, we as physicians must wake up and follow the trend of public thinking or we shall be *forced* to do so. So, I repeat, "Physicians, wake up!"

THE PROBLEM

We today face changes which must be given the serious consideration of every physician. Study the platforms adopted in Chicago by both the Democratic and the Republican party. What do we find? Strong emphasis on the health needs of our people. This is significant. Our present system of medicine evidently does not adequately protect or minister to the needs of our people. I believe each of us is willing to concede that our system needs to be better planned, or even drastically re-vamped. All of us are painfully aware that, despite the great strides made in our medical centres in both preventive and curative medicine and surgery, we do have, not only in Virginia, but throughout the country as a whole, rural sections badly in need of adequate medical care and hospitalization. Is State or Federal control the answer to this problem? I think not. However, unless we take cognizance of these needs as a profession we shall certainly be forced into some sort of a State or Federal system not to our liking.

WHY STATE OR FEDERAL PLAN NOT FEASIBLE

First, medicine cannot be changed nor the system revolutionized by precipitate action because medical service is not static. When a diploma is granted, an internship certificate awarded, the recipient thereof is not "finally" prepared. You cannot have best medicine if we surrender freedom of initiative to government control. You must not curb medical aspirations or research genius. Medicine is not a standardized commodity to be passed down through the years with little change. It cannot be bought in bulk and retailed to patients in need of service. It is utterly impossible for one industrialist or group of industrialists, for one doctor or group of doctors, for one legislator or group of legislators to come forth with a satisfactory plan which will cover all conditions and classes of people. Our system of medicine, to which we may pardonably point with pride, is the result of years of planning and growth. Fundamental principles and established procedures cannot be changed overnight to a workable plan either by aggressive thinkers, or by State or Federal

*Address of the President at the annual meeting of the Medical Society of Virginia in Richmond, October 23-25, 1944.

laws. A workable plan will require much time by many people. However, the time for action is now, or Federal medicine will become a reality in America.

OUR SHORTCOMINGS

Despite the trend in the thinking of the public, we as a profession have refused to see "the handwriting on the wall." We cannot continue this ostrich-like attitude. Empires have fallen because rulers refused to lend an ear to the voice of the people. Some of us say we cannot be robbed of our "private" enterprise, or our "personal initiative" threatened. History has taught us that *anything* can happen *anywhere* if the people of *any* nation are sufficiently aroused. Some of us say that it is absurd to think of medicine becoming a political football. I concede this point but at the same time unless we as a group put forth a sound, practicable plan for adequate medical care and hospitalization for our people we are in danger of being made just that. It is all right for us to praise our scientific and educational work and our contributions to the advancement of medicine but that does not answer America's question, "WHY CANNOT WE HAVE ADEQUATE MEDICAL AND HOSPITAL CARE WITHIN THE REACH OF EVERY MAN, WOMAN AND CHILD?" That question is being all but shouted from the rooftops; IT MUST BE ANSWERED: We must go with the current of public opinion and not just drift with the tide. OURS MUST BE THE INITIATIVE: We may consider medicine as ours, to do with as we please, but we know deep in our hearts that we must be governed by the wishes of our people as a whole. Today as never before this Society and we as individuals are being called upon to make outstanding contributions to the advancement of medicine. We have advanced medicine as a science but we have sadly neglected the economics of medicine, public relations, and better distribution of physicians. We are now face to face with the threat of regimentation and we must come forth with a far-reaching plan to improve our present-day system of distribution. We must assume leadership in providing proposed facilities for insuring against the hazards of sickness and the cost of hospital care. We have gone a long way in preventive and curative medicine but we have failed woefully in adapting medicine to the changing pattern of living.

COOPERATION OF THE PROFESSION IMPERATIVE

As previously stated, there are many unsatisfac-

tory features in present-day medicine, the two most important being (1) the high cost of medical care, and, (2) lack of adequate medical care and hospital facilities for those in the lower income brackets and for our rural population. Any plan to furnish adequate curative treatment, sound preventive measures, and good hospital facilities must be worked out jointly by the medical profession and those interested in a practicable plan. Any plan to make America a stronger, healthier, happier nation, to be successful must be planned and supervised with the aid of the medical profession. The fundamental principles on which our system of medicine was founded must be preserved as they are vital to the growth and continued scientific development of medicine and surgery. On the economic side as well, guidance must be under the medical profession. We cannot have preventive and curative medicine furnished by one group and the economics of medicine handled by another. Curative and economic medicine must be studied together, planned together, and any plan proposed *must give the patient free choice*. This is a democratic principle which must be preserved. In any plan for better and less costly medical service this one thing must stand out above all, for in the American way personal freedom of choice comes first. The threshold of the home cannot be crossed with just any plan, governmental or otherwise, as certain personal rights must be regarded as sacred. Any program must be based on our present system of medicine with freedom of choice by the patient.

I think each of us believes that the best quality of medicine is obtainable under our present system of private practice. The principal objection is that it is not within reach of a sufficient number of our people. Therefore, we must take an active part in developing plans, or using existing facilities, to provide not only pre-payment for hospitalization but also for medical and surgical care. There are in existence many pre-payment plans which insure free choice and adequate treatment. We must devote an increasing amount of attention to the economic phase of medicine. Various medical groups are already blazing the trail in this adventure from which we can expect results. Our system of medicine and its progress is built up by the support and endorsement of society which it preserves and protects. For some reason our social reformers have gotten the wrong impression of the attitude of our profession;

some think we are attempting to be the masters in a great organization to regulate service; that we intend to dictate our policies; that we are an organization of specialists, selfish and dogmatic; that we have forgotten the Hippocratic oath. However, we are not the masters; the whole structure of our profession is based on the desire and the willingness to serve. It is not a question of master and servant; there is a great difference between *service and subjugation to the wishes and the will of others*.

Ours is the responsibility for the distribution and the "purchasability" of adequate medical care. We must take an active part in helping to develop a sound prepaid medical care plan which creates purchasing power through a satisfactory insurance, or pre-payment program. A practicable method of financing medical care will bring good medicine within the reach of all. I understand there are now more than thirty pre-payment medical care plans in operation under State, county, or local medical supervision. Our people must be educated to the importance and the value of pre-payment plans now available; we should not allow them to adopt the policy of "let the government do it".

MEDICINE AND INDUSTRY

Changing from war-time to peace-time needs is one of the big problems confronting us today and on its successful solution rests the progress, prosperity, and happiness of the nation. We of the profession, I fear, are not alert to the part we have an opportunity to play in switching back to peace-time conditions. On the shoulders of industry and labor rest the grave responsibility of readjustments. If our profession wishes to be a major factor in health plans, health service, and health activities of our larger industries, we must re-vamp our medical policies, medical traditions, and create a stronger relationship between capital, medicine, and labor on a sounder, more business-like basis. When we analyze the progressive work being done in health measures, accident care, treatment of occupational diseases, selection of personnel, hygienists, sanitary engineers, safety engineers, etc., we find the practicing physician has not kept abreast of industrial thinking and advancement in shaping a sound policy of medical care, although we plan to render service to the employee. Investigation has shown that health and welfare are most important factors in production. Industry is calling for medical help to solve

its problem of the loss of man hours due to illness. In fact, some industrialists have already challenged the medical profession. How many of you have read "Kaiser Wakes the Doctor?", a story outlining Henry J. Kaiser's industrial medical plan? This book does not hesitate to attack our conservative medicine and our medical policies. Health in industry is not a state problem alone; it is not a public health problem; it is not a problem for social reformers; it is simply a business proposition to be settled by joint action of management, labor, and medicine. Organized labor is ever alert to improve living standards, working conditions, and health measures. It has already established a beach-head for a strong invasion on our present system of medicine if necessary. Labor is the consumer and should be recognized. Management on the other hand knows that manpower is its greatest asset. It knows that if its workmen are assured good medical care and hospitalization for themselves and their families without being forced into heavy debt, or even worse forced to seek charity, they will be contented and stable wage earners. Our profession has shown but little desire to familiarize itself with this problem. Unless we as a profession offer a workable plan to industrialists they will solve this problem in their own way whether we like it or not.

Let's consider our own State for a moment. She is fast becoming a great industrial state. Our labor, our climate, our raw materials, our health record, our compensation laws, our views on free enterprise, all appeal to capital. Who among you tonight could intelligently discuss with industrialists such questions as man power maintenance, medical policy guidance, job placement, dietary deficiency in the worker, or define occupational diseases as used in the Virginia law? Who of you could intelligently advise any industry in our State under our amended compensation act whether to provide schedule coverage or inclusive coverage against occupational diseases? Nearly 90 per cent of the compensation cases in the State involve medical questions. There are still many unsolved medical problems in connection with our Workmen's Compensation Act and these must be solved to the satisfaction of the management of industry. When industry changes the pattern and needs of society, medicine must change also. Either the industries of our State will dictate to us, or we must meet its challenge and come forth with a solution for its problems. If under our present system

of medicine we cannot offer a solution, then we must change the system or industry will arrange for medical supervision through some other agency.

During the past few years when heavy demands have been made on production, every strike has received headlines in the daily press. The country lamented the fact that production was slowed down by these strikes. Yet, the man hours lost in these same plants during the year from accident, disability, and illness which were preventable with a stronger medical care program were greater; they received little publicity. A few months ago in Roanoke, Virginia held its tenth annual State-Wide Safety Conference and in Governor Darden's message and Norman Damon's address these startling facts were revealed. Only three diseases are more deadly for all ages than accidents, and from the age of two to twenty-eight accidents lead all the rest. In 1943 our casualty list from accidents, although not as great as in some other years, was nearly 100,000 dead and about 10,000,000 injured. This meant an economic loss to our country of more than 2 per cent of our current national debt. What has medicine to do with accidents? We must have organized and concerted plans to care for these casualties; if we do not, then the State or some other agency will devise plans. Various farm organizations are also following the trend of industrial thinking for better equalization of health opportunities.

NEED OF HEALTH EDUCATION

There is an old saying, "You can't teach an old dog new tricks." So, in any plan for promoting better health we must needs go back to the child. We must bring up our citizens of tomorrow with a better understanding of adequate health standards. I strongly advocate more health instruction in our public schools. The child should be taught more about growth, development, nutrition, and body functions. The Commonwealth is now making extensive studies of our system of education and in any future plan I should like to see more thought given to health problems in the school. We have entirely too many young people finishing high school denied work in a gainful occupation because of some neglected defect or disability. Bear in mind that over 42 per cent of the first 2,000,000 men examined for military duty were rejected. Our young people must become more interested in their own health, in order for any plan of medical care to succeed. The

child must be given adequate instruction with regard to food, shelter, and clothing; he must be taught the basic laws of personal hygiene and the fundamentals of health. In other words, he must be made "health conscious".

DEFERMENT OF MEDICAL STUDENTS

Our present system of medicine should continue to furnish high standards of stability and maintain the great strides thus far made in curative and scientific medicine. A cloud is now on our horizon! There will be an alarming shortage of physicians in our State and in our country in a few years if the present regulations and policies of Selective Service in regard to the status of medical students is not changed. You doubtless know that all deferments of pre-medical and medical students not now enrolled have been abolished. According to *The Journal of the American Medical Association*, "The medical schools must obtain the majority of their students for the 1945 classes from civilian sources. This means that about 70 per cent of students must be obtained from women and physically disqualified men, the other 30 per cent being the quota under control of the Army and the Navy. An editorial in *The Journal* states, "If this alarming situation is not corrected there will result an annual and cumulative deficit of 2,000 doctors a year." May I ask that you write your congressman? Miller's amended bill provides that not less than 6,000 medical students be deferred each year as necessary to maintain the health of the nation. Work for this bill!

OUR RESPONSIBILITY TO RETURNING PHYSICIANS

I wish now to turn to our duty to members of our profession. Many of our colleagues are in the armed services undergoing untold hardships. As victory appears in the offing these men will be returning home. Their return raises two problems for us: (1) We must assure every member of this Society engaged in war service opportunity to take up where he left off, and (2) provide postgraduate or "refresher" courses for returning physicians. The refugee doctor who has located in our State should be shown every consideration but our returning men should be protected first and enabled to resume their former practice.

A poll compiled by *Medical Economics* from a large number of doctors in the service, published recently, reveals the following: Ninety-five per cent

do not expect to remain in the armed services indefinitely; 64 per cent plan to resume former practice; 22 per cent are undecided; and about 60 per cent plan post-graduate work before again entering practice. These figures show that practically all plan to return to civilian practice, a large majority to their former locations.

Post-graduate education for returning men is a *must* in our planning. I am wondering if our hospital heads, our two medical schools of the Commonwealth, and this Society cannot work out and coordinate plans for a good "refresher" or post-graduate course for these men. It seems to me that this procedure would assure an adequate answer to this problem. In any plan the cooperation of our State Department of Health should be enlisted.

OUR PHYSICIANS ON THE HOME FRONT

While all of us are cognizant of the splendid service of our colleagues in the armed services, let us not forget to pay tribute to our physicians on the home front. Over 60,000 doctors have joined the armed services, over 1,000 went from Virginia, one-third of our doctors, part of whom were the cream of our profession in organizational work, in skill, and in endurance. However, those of you remaining picked up the torch and carried on! We are proud of our Virginia doctors both on the battle front and on the home front; each has served splendidly. Many of these men on the home front were denied commissions and shouldered heavy burdens. You on the home front have made a wonderful record in maintaining, yes, even raising the health standards of Virginia. A year or two ago I made a trip through my section of the State with Doctor Trout to make a survey of available doctors for military service as well as for essential civilian needs. In going through the counties, more than 50 doctors over sixty-five, some past seventy, came to us asking what they could do to help. Some were on canes and crippled with the weight of years, some bearing scars from heroic work in World War I, yet all expressed determination to help in every possible way. Our

only answer to them was, "Continue the fine work you are doing but keep your britches on a little longer." Tonight I wish to pay tribute to these men and to every doctor in Virginia who has been doing double duty, risking his health, and in instances becoming a casualty in the care of our people. I know the Medical Society of Virginia will in its annals give special recognition to the splendid service of these men. If I had my way, a distinguished service medal would be pinned on their breasts! May our Society continue to develop such men and preserve the hallowed traditions of our great profession.

In closing may I summarize the points I have attempted to make:

The responsibilities of the medical profession, unless we wish to be regimented by law, are:

1. Better distribution of physicians in rural areas.
2. Adequate hospital facilities in all parts of our country.
3. A practicable plan of pre-payment for medical, surgical, and hospital care within the reach of those in the lower income brackets.
4. Better health instruction in our public schools.
5. Cooperation with industry in its medical problems; more emphasis in our medical schools on industrial medicine.
6. Opportunities for post-graduate education for our returning physicians and aid in re-locating for practice.
7. Maintenance of high standards of medical accomplishment, including support of plans to insure sufficient medical students to become the doctors of the future.

From my viewpoint these things must be done if we as a profession continue to hold our place in the world of tomorrow. In these war-time years, many have given their lives for America. We are called upon only to do our part in caring for the health of her people. We can do no less than answer the clarion call for better health service for all.

RECENT ADVANCES IN ELECTROCARDIOGRAPHY: AN EARLIER OBJECTIVE DIAGNOSIS OF ANGINA PECTORIS

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and

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In many instances the interpretation of precordial pain, particularly in the neurotic patient,¹ presents one of the most difficult present-day medical problems. In the relatively young individual an accurate objective evaluation of the cardiac status is imperative. Furthermore, in older persons the differential diagnosis involving angina pectoris and various other conditions is not always objective or without difficulty.

All too frequently patients are seen who illustrate two extremes in diagnosis encountered in this condition. One is the "cardiac invalid" with a normal cardiovascular system; the other is the patient with arteriosclerotic heart disease whose life and usefulness have been shortened because of poor management in the early stages of the disease.^{2, 3, 4, 5} Much of this uncertain management is due to the unjustified pessimism with which angina pectoris is regarded.

Recent studies by White² reveal a more encouraging prognosis and a new conception of coronary artery disease, placing the old fatalistic attitude in a more unjustified position. This new conception is that coronary artery disease is mainly "an acute or subacute rather than a chronic disease, though frequently with recurrency".² Even though drastic and permanent changes involve the coronary arteries, special care during the acute stages can prevent significant damage to the heart muscle. Such special care is continued until nature has enlarged the intercoronary anastomoses^{5, 6, 7} to the degree that coronary flow is adequate to meet the demands of the myocardium under stress. The importance of an early diagnosis is, therefore, emphasized.

The recent painstaking investigations in electrocardiography of Wilson, Nyboer, Master and Levy and their associates have added much to the clinical information afforded by the electrocardiogram. It is with the combined application of their contributions that this paper is concerned.

The electrocardiographic studies to be described may appear cumbersome but repeated use of these procedures has resulted in a practical routine. However, it should be added that in many instances any demonstration of a reduced coronary reserve is important enough to justify unusual effort.

The following routine has been found useful in this laboratory:

1. a. Conventional electrocardiogram with two chest leads.
- b. Orthodiascopy and cardiac fluoroscopy.
2. Unipolar precordial electrocardiogram.
3. Unipolar esophageal electrocardiogram.
4. Master "2-Step" Exercise Test.
5. Levy Anoxemia Test.

Usually each succeeding step is taken only when the preceding one proves non-revealing. The individual clinical picture generally dictates the selection of the tests.

The recommendations of the committee of the American Heart Association on the standardization of electrocardiographic nomenclature⁸ are followed in this paper. Further recommendations of Wilson⁹ are used in the additional terminology. All electrocardiograms are taken with the patient in the recumbent position.¹⁰

CONVENTIONAL ELECTROCARDIOGRAM, ORTHODIASCOPY AND CARDIAC FLUOROSCOPY

The conventional electrocardiogram consists of the classical bipolar limb leads and two bipolar precordial leads between the chest (C) and the left leg (F): CF₂ located over the right ventricle and CF₄ over the left ventricle. These two precordial leads produce tracings that are the resultants of potential variations of the electrical field from a relatively small area of the anterior myocardium and the electrical field from the diaphragmatic surface of the heart. The distribution of the latter electrical field within the body varies greatly secondary to the numerous intrathoracic positions the heart may assume. In accordance with laws governing the action currents of the heart within the body,¹¹ the magni-

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tude of the potential variations of these currents diminishes as the distance from the heart increases. Therefore, it is apparent that the resultant bipolar precordial electrocardiogram is predominantly determined by the electrical field from a small area of the anterior heart surface, picked up by the "exploring" electrode, and to a definite but lesser degree by the electrical field of the inferior heart surface, via the "indifferent" leg electrode^{12, 13, 14, 15} (see Fig 1). The varying influence of the indifferent left leg electrode makes difficult a logical interpretation of the bipolar method and defeats partially the purpose of the precordial electrocardiogram.

The present widespread use of the bipolar precordial electrocardiogram may well result in the erroneous interpretation of tracings from normal in-

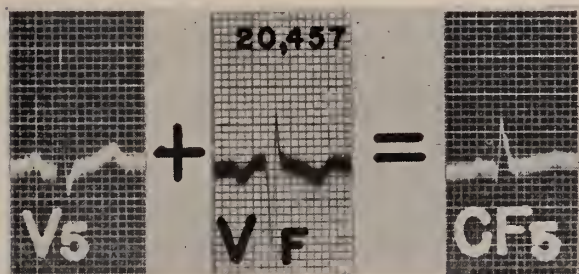


Fig. 1.—Algebraic equation illustrating the influence of the left leg lead, V_F , (shown as the mirror image of the unipolar left leg electrocardiogram) on the bipolar precordial electrocardiogram, CF_5 . V_5 is the unipolar precordial electrocardiogram representing the electrical potential of a relatively small area of the left ventricle in pure form.

dividuals, particularly when there is a question of coronary artery disease. Such errors may be due in part to the difficulties described in the preceding paragraph. Also, recent textbooks on clinical electrocardiography, setting up normal criteria for these precordial tracings, do not consider the varying influence of the indifferent left leg electrode and rarely adequately emphasize the wide range of normal variation.

The two bipolar precordial leads are still used routinely in this laboratory rather than the preferable unipolar leads, to be discussed later, owing to the fact that they are more easily obtained by the technician. However, they are interpreted with many reservations.

The term, "Lead IV", has been avoided in this discussion because it is misleading. The precordial leads are semi-direct leads from the anterior heart surface and are fundamentally different from the classical limb leads. The electrocardiograms of the

latter are the resultants of the electrical fields from two large areas of the myocardium obtained from points at relatively great and equal distances from the heart.

Orthodiascopy, after Kurtz,¹⁶ has proven a simple and satisfactory means of detecting cardiac enlargement, which may be regarded as a sign of heart disease, often of long duration. Knowledge of the heart's size, shape and position is of invaluable aid in the clinical interpretation of the electrocardiogram.^{9, 17, 18} Cardiac and pulmonary fluoroscopy add still further information.

UNIPOLAR PRECORDIAL ELECTROCARDIOGRAM

The precordial leads are taken from positions on the chest designated 1, 2, 3, 4, 5 and 6 extending from right to left, over the right and left precordium, defined by the committee of the American Heart Association for the standardization of precordial leads.^{19, 20}

Additional leads are taken from the left posterior axillary line designated as 7, the left scapular line, designated as B, both at the same level as position 6 and another from the tip of the ensiform process, designated as E (see Fig. 2). The letter V indicates the unipolar lead while CF indicates the bipolar lead with the left leg as the site of the indifferent electrode.¹⁹

The unipolar precordial electrocardiogram is obtained by placing the exploring electrode on the various chest sites, while the indifferent lead is attached to a "central terminal" of approximately zero potential. In this laboratory a central terminal recommended by Wilson⁹ is used which consists of three wires connecting the three extremities, right and left arms and the left leg (see Fig. 3). The use of this central terminal as the indifferent electrode allows the potential variations over the precordium to be recorded in pure form.^{21, 22}

In the normal unipolar precordial electrocardiogram from the right precordium, i.e., V_1 and V_2 , the R deflections are small and thin while the S deflections are relatively deep and thick. As tracings are obtained from points further to the left, the R deflections progressively become larger, until position V_5 is reached, while the S deflections become smaller and thinner and a Q wave may appear. At and beyond V_5 the R deflections become progressively smaller. In the adult the T wave is upright except at V_1 where it may be either upright or inverted.¹⁵

The R deflection reflects the "electrical force produced by excitation of the muscle between the exploring electrode and the ventricular cavity."⁹ The T wave is thought to be due to a reversal or decline of the excitation process.²³ Abnormal alterations in the form of the electrocardiogram reflect a change in the normal physiochemical processes of the myocardium accompanying such conditions as anoxia, tissue inflammation, tissue necrosis, tissue fibrosis, alteration in acid base balance, and many others.

Augmented unipolar limb leads, allowing the recording of the cardiac potential variations from one extremity, are obtained by breaking the connections

the detection of small lesions involving the anterior, lateral and diaphragmatic (anterior portion) surfaces of the heart that may not be evident in the conventional mode. This type of electrocardiogram lends itself to a logical interpretation because it reflects only the potential variations of the underlying myocardium, unaffected significantly by the indifferent electrode or the position of the heart. This method is not disposed to the difficulties and errors of interpretation present in the bipolar method.

It is easily appreciated that the unipolar techniques and studies of Wilson have established clinical electrocardiography on a more scientific basis,

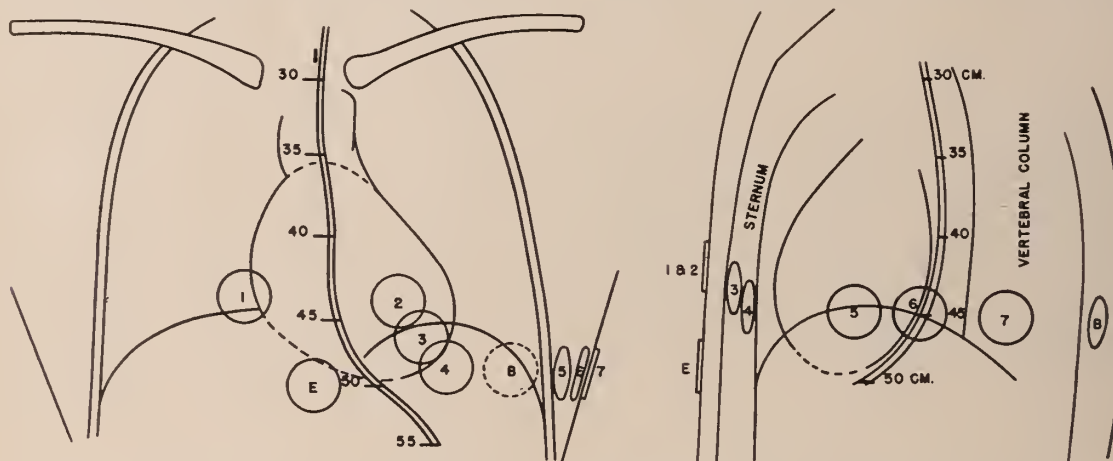


Fig. 2.—Orthodiagram of a normal individual. (A). Antero-posterior view. (B) Left lateral view. Coins were placed on the various chest sites and a metallic electrode at various esophageal levels to demonstrate the relation of these positions to the heart. E over the tip of the ensiform process; 1 and 2 in the right and left sternal lines at the level of the fourth interspace; 4 in the left mid-clavicular line at the level of the fifth interspace; 3 midway between 3 and 4; 5, 6 and 7 in the left anterior, mid and posterior axillary lines and 8 in the left scapular line. The last four positions at the same level as 4. The centimeter markings indicate the distance of various esophageal levels from the external nares.

of one extremity with the central terminal and attaching the exploring lead wire to the electrode of that extremity⁹ (see Fig. 3). For practical purposes these augmented unipolar limb leads serve as unipolar leads. At the present time, a sufficient number of statistical studies using this technique has not been published to justify the clinical use of augmented unipolar limb electrocardiograms other than to determine the electrocardiographic position of the heart.

The combined interpretation of the nine unipolar chest and the three unipolar limb electrocardiograms affords the same information as precordial tracings, many times in excess of this number, obtained by using the limbs and back individually as the site of the indifferent electrode.

The unipolar precordial electrocardiogram allows

allowing logical interpretation in place of the less satisfactory empirical interpretation necessitated by bipolar techniques.

For a complete discussion of this subject the reader is referred to "The Unipolar Electrocardiogram", a monograph by Wilson,⁹ undoubtedly a classic.

UNIPOLAR ESOPHAGEAL ELECTROCARDIOGRAM

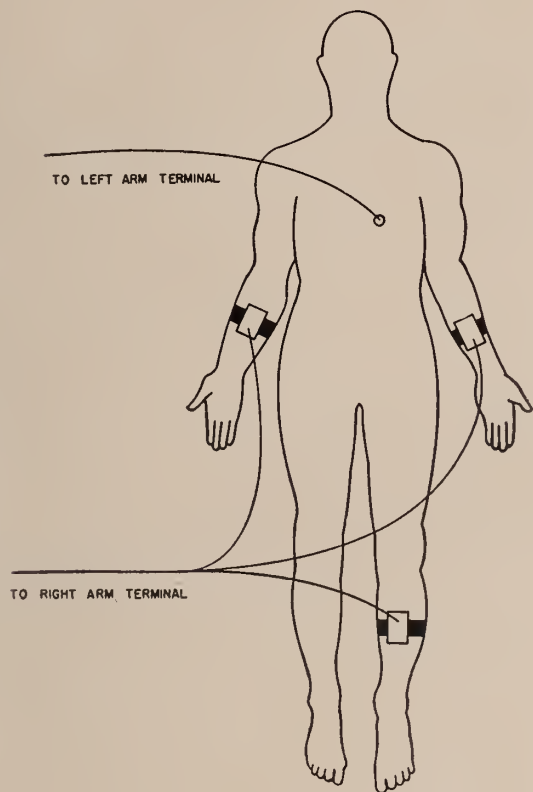
The esophageal electrocardiogram is obtained by placing an exploring electrode* at various esophageal levels in close proximity to the posterior surface of the heart. This arrangement consists of a Rehffuss type stomach tube through which a wire is connected to a small metal tip on the distal end. This wired tube is passed through the nose in the usual manner. High resistances encountered with the esophageal electrocardiogram

*The Nyboer esophageal lead may be obtained from C. R. Bard, Inc., 79 Madison Avenue, New York.

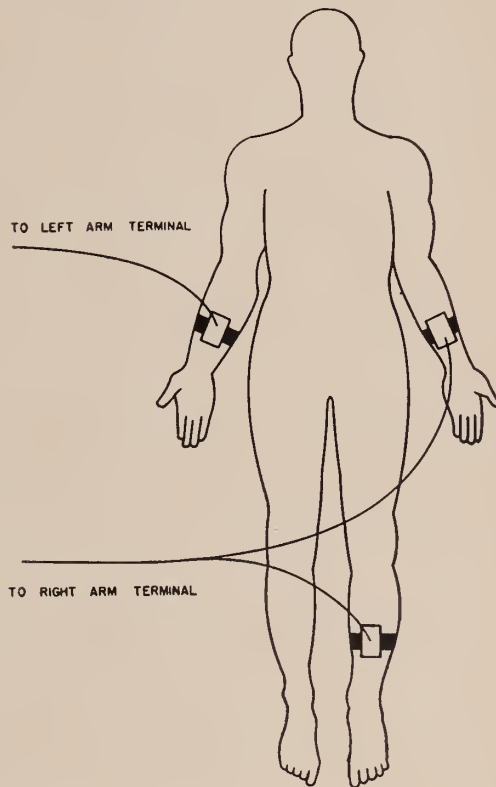
phageal electrode necessitate the use of an amplifying tube electrocardiograph.

The central terminal of zero potential, previously described, is used as the indifferent electrode in obtaining unipolar esophageal electrocardiogram, thus the potential variations of the posterior myocardium are recorded in pure form. These tracings are designated by the letter E followed by a number indicat-

The normal esophageal electrocardiogram (see Fig. 12) from ventricular levels is similar in form to the precordial electrocardiogram from sites opposite the antero-lateral aspects of the left ventricle, i.e., V_4 and V_5 , and the unipolar limb electrocardiogram reflecting the potential variations of the left ventricle. Auricular levels yield tracings with a characteristic intrinsic auricular deflection (similar to the RS de-



UNIPOLAR PRECORDIAL LEAD



AUGMENTED UNIPOLAR RIGHT ARM LEAD

Fig. 3.—Diagram of central terminal and method for obtaining unipolar precordial and augmented unipolar limb electrocardiograms as recommended by Wilson⁹. The unipolar limb leads are designated: right arm V_R , left arm V_L and left leg V_F .

ing the distance of the exploring electrode in centimeters from the external nares.⁹ Tracings are usually obtained at 2.5 centimeter intervals between 55 and 30 centimeters from the nose (see Fig. 2).

Esophageal electrocardiograms representing the potential variations of the posterior myocardium of both the normal and abnormal heart have been shown to correlate with established electrocardiographic principles,^{24, 25, 26, 27} with certain exceptions. These exceptions are presumably due to artefacts resulting from synchronous motion of certain portions of the esophagus with cardiac movements.

flection of the ventricular complex) and a ventricular complex which changes in form as higher auricular levels are reached. The ventricular complex from low auricular levels resembles that from the ventricular level. As higher auricular levels are attained, the R deflection becomes smaller and the S deflection deeper until the ventricular complex is similar to that of the unipolar right arm lead. Above the auricular level both the auricular and ventricular complexes resemble those of the right arm, predominantly reflecting the negativity of the cardiac blood cavities throughout systole.

MASTER: "TWO-STEP" TEST

MALES

Table I.

STANDARD NUMBER OF ASCENTS

WEIGHT	Age												
	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69
40-49	35	36											
50-59	33	35	32										
60-69	31	33	31										
70-79	28	32	30										
80-89	26	30	29	29	29	28	27	27	26	25	25	24	23
90-99	24	29	28	28	28	27	27	26	25	25	24	23	22
100-109	22	27	27	28	28	27	26	25	25	24	23	22	22
110-119	20	26	26	27	27	26	25	25	24	23	23	22	21
120-129	18	24	25	26	27	26	25	24	23	23	22	21	20
130-139	16	23	24	25	26	25	24	23	23	22	21	20	20
140-149		21	23	24	25	24	24	23	22	21	20	20	19
150-159		20	22	24	25	24	23	22	21	20	20	19	18
160-169		18	21	23	24	23	22	22	21	20	19	18	18
170-179			20	22	23	23	22	21	20	19	18	18	17
180-189			19	21	23	22	21	20	19	19	18	17	16
190-199			18	20	22	21	21	20	19	18	17	16	15
200-209				19	21	21	20	19	18	17	16	16	15
210-219				18	21	20	19	18	17	17	16	15	14
220-229				17	20	20	19	18	17	16	15	14	13

FEMALES

Table II.

WEIGHT	Age												
	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69
40-49	35	35	33										
50-59	33	33	32										
60-69	31	32	30										
70-79	28	30	29										
80-89	26	28	28	28	28	27	26	24	23	22	21	21	20
90-99	24	27	26	27	26	25	24	23	22	22	21	20	19
100-109	22	25	25	26	26	25	24	23	22	21	20	19	18
110-119	20	23	23	25	25	24	23	22	21	20	19	18	18
120-129	18	22	22	24	24	23	22	21	20	19	19	18	17
130-139	16	20	20	23	23	22	21	20	19	19	18	17	16
140-149		18	19	22	22	21	20	19	19	18	17	16	16
150-159		17	17	21	20	20	19	19	18	17	16	16	15
160-169		15	16	20	19	19	18	18	17	16	16	15	14
170-179		13	14	19	18	18	17	17	16	16	15	14	13
180-189			13	18	17	17	17	16	16	15	14	14	13
190-199			12	17	16	16	16	15	15	14	13	13	12
200-209				16	15	15	15	14	14	13	13	12	11
210-219				15	14	14	14	13	13	13	12	11	11
220-229				14	13	13	13	13	12	12	11	11	10

From Master *et al.*, *Am. Heart J.*, **24**:777, 1942, by permission of Commander A. M. Master and the C. V. Mosby Co., St. Louis.

The esophageal electrocardiogram is similar to the precordial electrocardiogram in that it records the potential variations of relatively small areas of the myocardium and thus allows the detection of small lesions otherwise not evident in the usual electrocardiogram.

MASTER "2-STEP" TEST

This is a functional test of the heart, rigidly standardized by many trials and years of observation, which is safe and convenient to perform.^{28,29} Although this procedure was formerly used as a test of the mechanical efficiency of the cardiovascular system, it has recently been adapted for an electrocardiographic investigation of coronary insufficiency,^{30,31,32} wherein certain changes in the form of the electrocardiogram, following exercise, have been defined as consistent with that condition.

These electrocardiographic changes are due to alterations of physiochemical processes in the myocardium, presumably due to ischemia resulting from a discrepancy between the coronary flow and the metabolic demands of the heart.

The test with minor technical modifications as used in this laboratory is as follows: After the patient has reclined for sufficient time to allow the cardiovascular system to assume a basal level, a control electrocardiogram is recorded. The control consists of leads I, II, III and CF₄ (the precordial electrode held in place by a rubber chest strap). A standardized amount of exercise is then performed by the patient in a definite time interval. This amount is governed by tables (see Tables I and II) compiled, according to sex, age and weight, from careful quantitative measurements of work²⁸ which does not produce an "abnormal response" in the normal individual.^{30,31,32,33} The patient then walks up and down two nine-inch steps, one "trip", a certain number of times in exactly one and a half minutes. This is accurately accomplished when the patient is so instructed that one "trip" requires exactly five paces (see Fig. 4) and each pace is taken synchronously with the beat of a metronome. The metronome rate which will allow the completion of the exercise in the exact time specified is obtained by multiplying the prescribed number of "trips" by the arbitrary factor 3.33. At the end of each "trip" the patient turns in the same direction, avoiding dizziness and entanglement in the electrocardiographic cable. Immediately after completion of the

exercise he lies down again and another electrocardiogram is recorded. It is important that this second tracing be completed within one minute after exercise as abnormal electrocardiographic responses are often very transient. Greater accuracy in the standardization of the record is obtained by using two millivolts for a two centimeter deflection rather than the usual one millivolt for one centimeter.

When the standard test does not produce an abnormal response the procedure is repeated, after a suitable rest period, with twice the number of "trips" at the same rate. In the event that precordial discomfort appears during exercise, the com-

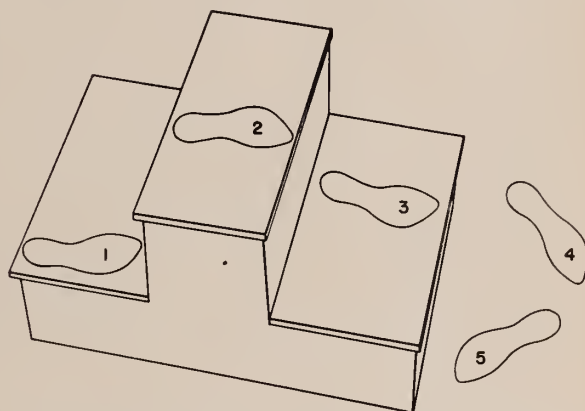


Fig. 4.—Master "2-Step", two nine inch steps. The foot-prints illustrate how one "trip" can be performed in exactly five paces.

pletion of the prescribed number of "trips" is not attempted and the second electrocardiogram is recorded.

The criteria of an abnormal response are: (1) Depression of the RS-T segment of more than 0.5 mm. below the P-R interval level. (2) A change in the T-wave from upright to isoelectric or inverted form, or from inverted to isoelectric or upright form. (3) Multiple premature beats. (4) Widening of the QRS. (5) Deep Q waves. (6) Prolongation of the P-R interval. (7) Heart block.³²

Extracardiac factors capable of influencing the electrocardiogram that should be ruled out in the event of an abnormal response are: pulmonary disease, anemia, fever, hyperthyroidism, tachycardia, upper respiratory infections, a recent meal, smoking, drugs affecting the cardiovascular system, etc. Factors such as the state of the individual's physical training or occupation have no significant influence

in the electrocardiographic response to this standardized exercise.^{29, 31, 33}

In some instances, many times the amount of the standardized exercise may be performed by the normal individual without an abnormal electrocardiographic response, although blood pressure and pulse rate changes fall within the realm of the abnormal.³⁴ This probably suggests that in the normal individual there is little correlation between the form of the electrocardiogram and the mechanical efficiency of the cardiovascular system in response to exercise.

According to the studies of Master *et al.*,³² in patients with "angina pectoris" this test provides objective evidence of "coronary insufficiency" in 39 per cent of those with normal and in 66 per cent of those with abnormal control electrocardiograms. The precipitation of precordial and associated discomfort is regarded as presumptive evidence; however, no correlation appears to exist between the presence or absence of subjective sensations and the electrocardiographic response in these patients.

In addition to the objective and presumptive evidence offered by this test, observation of other general physical and psychic responses, before, during and after exercise is of further aid in evaluating the individual's clinical picture.

Thus, the Master Test in a certain percentage of patients with angina of effort gives objective electrocardiographic evidence of heart disease when such is not evident in the previously described techniques because of type, degree or location of the lesion.³⁴

Some investigators³⁵ do not agree with Master as to the diagnostic value of exercise tests. It is difficult to compare and evaluate studies carried out under dissimilar conditions; however, none of these has approached Master's rigid standardization. Still others recognize the value of exercise tests but disagree as to the criteria of an abnormal response.^{36, 37, 38, 39}

LEVY ANOXEMIA TEST

This is also a functional test of the heart, standardized by many trials on several hundred individuals^{40, 41, 42, 43, 44, 45, 46, 47} and it is easily performed under conditions that allow a maximal control of extracardiac factors. Certain changes in the form of the electrocardiogram resulting during induced anoxemia serve as an index, within undefined limits, of coronary reserve.

The coronary flow in the normal individual is

adequate to supply the myocardium with sufficient oxygen to maintain the normal spread and retreat of the excitation wave during the myocardial anoxia produced by this test. Individuals with coronary artery disease, where the flow is adequate to meet the metabolic demands of the myocardium under basal conditions, may develop cardiac pain and electrocardiographic changes during induced anoxemia. This test, in contrast to exercise, theoretically reduces only the oxygen content of the blood without altering the coronary flow or appreciably increasing the work of the heart.

In this procedure the patient lies on a comfortable table and breathes through a mouthpiece into the Levy apparatus.* Room air, 100 per cent oxygen, or a mixture of 10 per cent oxygen and 90 per cent nitrogen, may be administered by adjusting a set of valves. After breathing room air through the apparatus for a sufficient time to allow the cardiovascular system to assume a basal status, a control electrocardiogram consisting of leads I, II, III, and CF₄ is recorded. The patient is then allowed to breathe a mixture of 10 per cent oxygen and 90 per cent nitrogen, which at sea level produces a similar degree of blood oxygen saturation normally experienced at about an 18,000 foot altitude.⁴⁷ The patient breathes this gas mixture for twenty minutes or less if anginal pain occurs when a second electrocardiogram is recorded. After the second tracing is obtained 100 per cent oxygen is administered for one minute.

The criteria for an abnormal response are: (1) The arithmetical sum of the RS-T deviation in all four leads should total 3 mm. or more. (2) Partial or complete reversal of the direction of the T wave occurs in Lead I, accompanied by an RS-T deviation of 1 mm. or more in this lead. (3) A complete reversal of the direction of the T wave occurs in CF₄, regardless of any associated RS-T deviation in this lead.⁴⁸

Extracardiac factors to be considered in case of an abnormal response with the Levy Test are the same as those for the Master Test. Specific contraindications to the Levy Test are: the presence of congestive heart failure, performance of the test within four months of known myocardial infarction, or more than one test in twenty-four hours.⁴⁸ When

*Apparatus may be secured from the Foregger Co., 55 W. 42nd Street, New York, and the gas mixture from the Puritan Compressed Gas Co., Baltimore, Md.

these rules are observed the test is considered safe.

Results obtained with this gas mixture at different altitudes cannot be compared for, although the volumetric ratio of the inhaled gases remains constant, variations in atmospheric pressure directly effect the concentration of oxygen delivered to the lungs per unit volume of gas. Caution should therefore be observed at localities of significant altitude as the degree of blood oxygen saturation allowed by this mixture at or near sea level probably represents the maximum degree of temporary anoxemia consistent with safety.

According to studies by Levy *et al*,⁴⁴ in patients presenting "coronary sclerosis with pain", this test provides objective evidence of "coronary insufficiency" in 38 per cent of those with normal and in 62 per cent of those with abnormal control electrocardiograms. Again no particular correlation appears to exist between the occurrence of pain and the electrocardiographic response.

CASES

The following case reports are presented to illustrate specific instances wherein the preceding electrocardiographic techniques were the only means of obtaining objective evidence consistent with coronary artery and heart disease. The first two cases probably represent individuals in whom coronary artery disease is well established; nevertheless, objective evidence of this condition in these two relatively young men allowed the diagnosis and subsequent management to be instituted with more confidence than would have been possible had such evidence been lacking. In the third case, the opinion of the examiners was formed prior to the special electrocardiographic studies. This opinion was further strengthened by the negative findings in these studies.

Case 1.—Mr. G. L. P., a white farmer, aged 38 years, was admitted to the University Hospital on October 25, 1943. His chief complaint was a "numb aching" precordial discomfort that usually followed large meals, excitement and varying degrees of exercise. This complaint was of two years' duration. At times there was an associated discomfort which radiated down the inner side of the left arm to the fingers, a choking sensation and an aching of the jaw and lower teeth. In the two months prior to admission this condition became so severe as to prevent the patient from working at his accustomed rate. In this latter period seizures subsequent to

the initial daily attack were caused by increasingly greater effort. Relief was obtained by rest.

The review of systems was negative except for occasional nocturia of years' duration. The patient was in the habit of smoking a half pack of cigarettes a day. The past history was negative.

Physical examination revealed a robust young white male with no definite abnormalities. The systolic blood pressure was 122 mm. of Hg; the diastolic 80 mm. of Hg. The eye grounds were normal. The Wassermann and Kahn tests were negative. The routine blood studies, urinalysis, stool examination, erythrocyte sedimentation rate and x-ray examinations of the heart aorta and gastrointestinal tract disclosed no abnormalities. Orthodiascopy (see Fig. 5) revealed a measured frontal plane of 119 sq. cm.

3715	10-27-43
PREDICTED FRONTAL PLANE	120 SQ. CM.
MEASURED FRONTAL PLANE	119 SQ. CM.

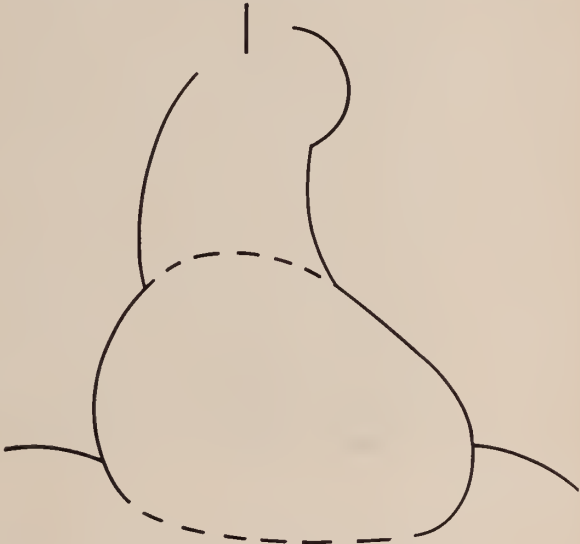


Fig. 5.—Normal orthodiascogram of Case 1.

and a predicted frontal plane of 120 sq. cm. X-ray studies of the dorsal spine showed moderate compression of the bodies of the seventh, eighth and ninth dorsal vertebrae with new bone formation between these bodies. An Exton-Rose glucose tolerance test yielded these figures: fasting blood sugar of 82 mgm. per cent, after 30 minutes 102 mgm. per cent, and 177 mgm. per cent after 60 minutes. A routine electrocardiogram was within the limits of normal variation.

Tracings obtained on October 30, 1943 (identical with those of Fig. 6) showed an inverted T wave in lead III. The unipolar chest electrocardiogram was within the limits of normal; however, the unipolar esophageal electrocardiogram demonstrated diphasic (\mp) T waves at ventricular levels, 55, 52.5

classical limb electrocardiograms, obscures information otherwise evident in the unipolar limb electrocardiogram. The answer to such a question must await further study not available at present in the literature.

On October 30, 1943, the double standard Master

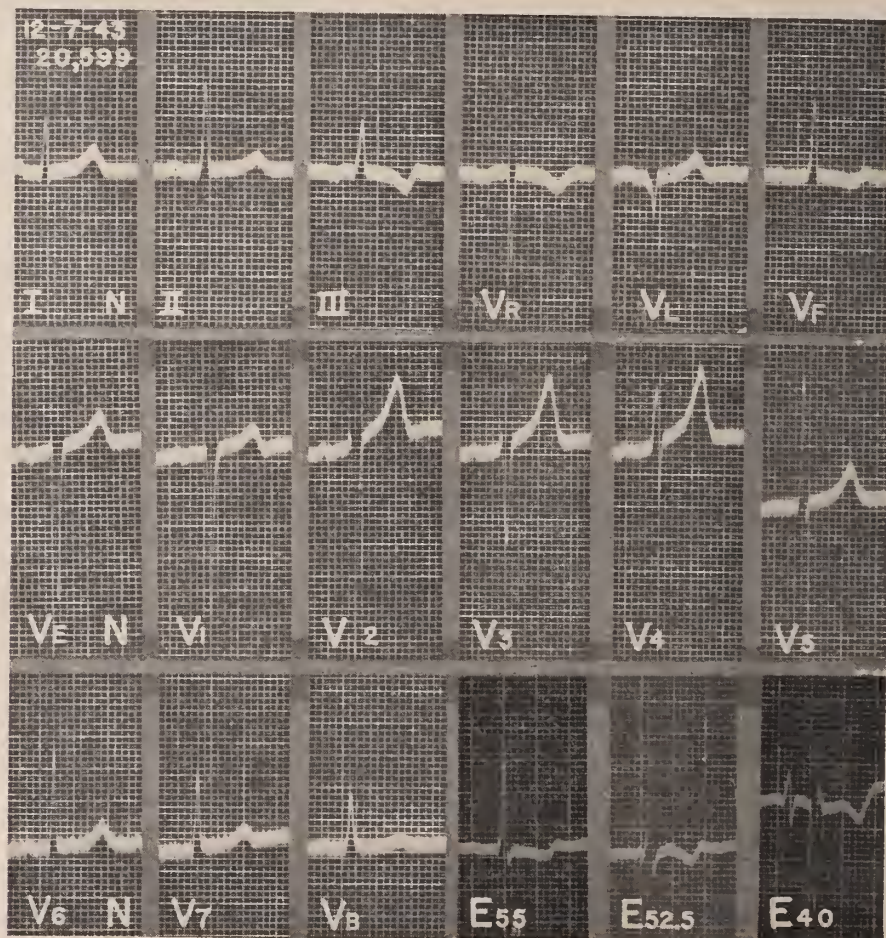


Fig. 6.—Case 1 (J.L.P.). A 38 year old farmer suffering from angina pectoris. Classical bipolar limb and unipolar precordial electrocardiogram within normal limits. Abnormal diphasic (\mp) T waves in unipolar esophageal electrocardiogram from ventricular levels 55 and 52.5. E 40 is characteristic of the normal esophageal electrocardiogram from the auricular level. Absent R in the unipolar left arm trace, V_L , and diphasic (\mp) T in the unipolar left foot trace, V_F , the latter resembling the T of the ventricular esophageal electrocardiogram.

and 47.5 cm. The T wave suggested the presence of damage of the posterior wall of the left ventricle.

It is interesting to observe that the unipolar left arm lead, V_L contains a relatively large (6 mm.) QS deflection while the T wave of the unipolar left leg lead, V_F , resembles the diphasic T of the ventricular esophageal electrocardiogram. This raises the question as to whether, in this particular case, the combination of electrical potentials from two large areas of the heart's surface, represented in the

"2-Step" Test, consisting of 42 "trips" in three minutes was performed. Figure 7 showing tracings of an additional test performed on December 7, 1943, reveals the following changes in the electrocardiogram after exercise: RS-T depression of $1+$ mm. in lead I, $2+$ mm. in lead II, 1 mm. in III and 1.5 mm. in lead CF_4 ; T_3 and P_3 from inverted to upright positions and a reduction of the T wave in CF_4 from 7 mm. to 3.5 mm. These changes constitute an abnormal response consistent with coronary

insufficiency. The exercise was accomplished without causing precordial discomfort but with a degree

dition progressed unfavorably. On December 10, a laminectomy was performed and the posterior roots of the first four thoracic nerves were sectioned bilaterally. Following the operation, the patient experienced no further precordial or right arm pain; however, exertion continued to reproduce the "choking" sensation. Seven weeks later he was able to perform the majority of his former activities with little discomfort and at that time spontaneously expressed pleasure concerning the result accomplished by the operation.

Electrocardiographic studies on February 1, 1944, revealed that the QS deflection in the unipolar left arm electrocardiogram had been replaced by a 4 mm. R wave while the diphasic T wave in the unipolar left leg electrocardiogram had become deeply inverted. There were no other definite electrocardiographic changes. A double standard Master "2-Step" Test showed a response similar to previous tests.

Case 2.—Mr. X. X., a gentleman-farmer, aged 38 years, was referred to this laboratory for studies on November 14, 1943. Four days previously while

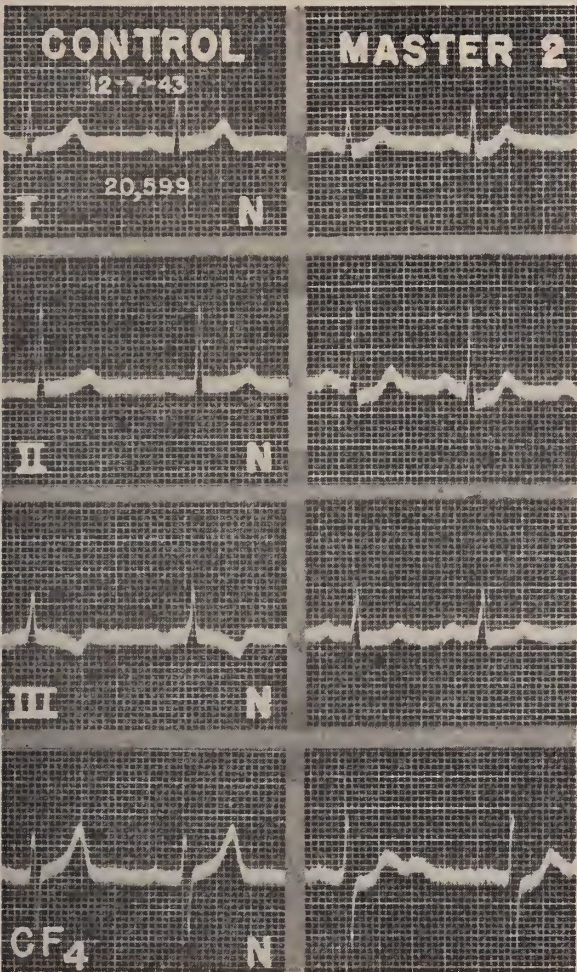


Fig. 7.—Case 1. Control electrocardiogram normal. After the double standard Master "2-Step" Test (42 "trips" in 3 minutes) there was a depression of RS-T segments in all leads with T₃ becoming upright.

of dyspnea not usually seen in the normal individual. Tracings taken immediately before and after smoking two cigarettes showed similar electrocardiographic changes but of lesser degree than those produced by the Master exercise test. Smoking, however, caused an increase in the heart rate of greater duration than this amount of exercise. The Levy Anoxemia Test (old method with 12 per cent oxygen and 88 per cent nitrogen⁴¹) produced no discomfort or significant electrocardiographic changes.

In spite of management consisting of restriction of activities and vasodilator drugs the patient's con-

3857	1-11-44
PREDICTED FRONTAL PLANE	123 SQ.CM.
MEASURED FRONTAL PLANE	122 SQ.CM.

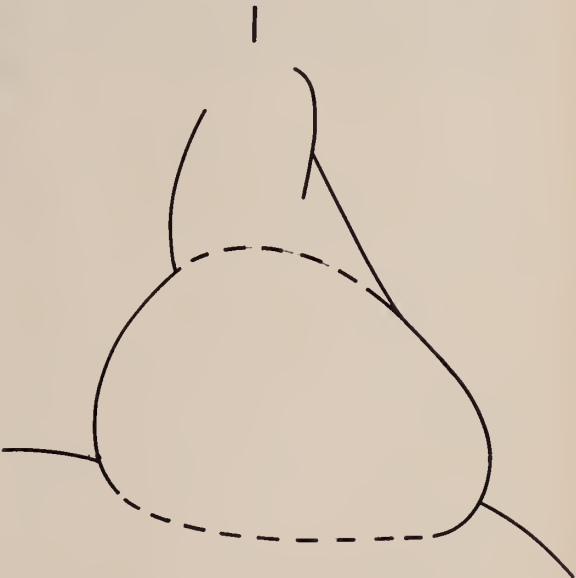


Fig. 8.—Normal orthodiagram of Case 2.

marching in an Armistice Day parade the patient was beset with a severe substernal "pressure" pain

that forced him to stop and rest. In the next few days he found that he could walk only a few blocks on level ground before experiencing a similar pain accompanied by moderate dyspnea. The review of systems and past history was negative. The patient habitually smoked about ten cigarettes a day.

Physical examination found the patient well developed but somewhat overweight. The systolic blood pressure was 150 mm. of Hg; the diastolic, 104 mm. Hg. The eye grounds showed no abnormal vascular

of multiple aberrant QRS complexes of ectopic ventricular origin. Similar changes of lesser degree were present after smoking two cigarettes with the exception of aberrant QRS complexes. A Levy Anoxemia Test was not performed.

Serial tracings taken at intervals of from one to four weeks demonstrated rather dramatic changes in the unipolar precordial electrocardiogram from positions 2, 3 and 4. Five sets of tracings, each taken at least two hours after eating, revealed the T waves

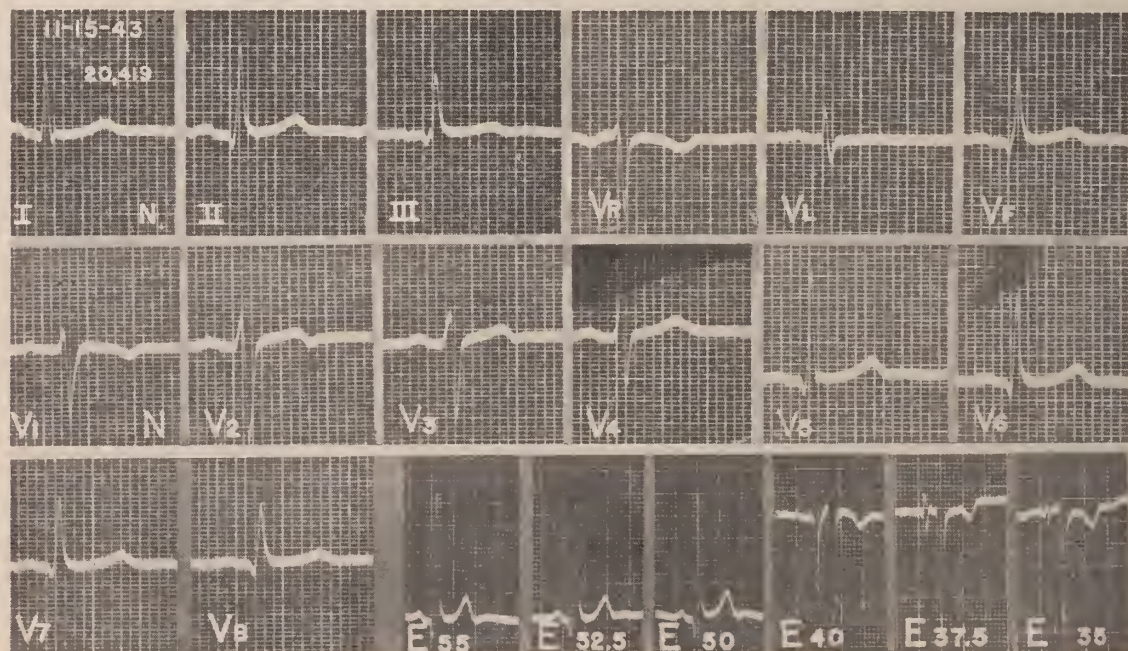


Fig. 9.—Case 2 (X.X.). A 38 year old gentleman farmer with angina pectoris. Classical bipolar limb, unipolar limb, chest and esophageal electrocardiogram within limits of normal variation. Trace taken with paper speed of 50 mm. second.

changes. The Wassermann and Kahn tests were negative. Routine blood studies were normal. Blood sedimentation (Mod. Cutler) was 15 mm. in one hour. Orthodiascopy revealed a measured frontal plane of 122 sq. cm. and a predicted frontal plane of 123 sq. cm. (see Fig. 3). A routine electrocardiogram was within the limits of normal variation.

Additional electrocardiograms, including unipolar chest and esophageal tracings, were within the limits of normal (see Fig. 9). The double standard Master "2-Step" Test, consisting of 42 "trips" in three minutes, caused the following changes in the form of the electrocardiogram: RS-T depression of 2 mm. in lead I, 2+ mm. in lead II and 1.5 mm. in lead III; change in the form of the T wave in CF₄ from diphasic to upright and the appearance

from these positions to alternate regularly between the upright and inverted forms. The remaining unipolar chest leads and the classical limb leads showed no definite changes. However, on one of the occasions when the above-mentioned precordial T waves were inverted, the unipolar left arm electrocardiogram contained an inverted T wave. A marked sinus arrhythmia was present in each tracing and forced inspiration slowed the heart rate to fifty-three a minute, suggesting a strong vagal influence.

Further electrocardiographic studies gave no additional information. These consisted of numerous unipolar and bipolar chest electrocardiograms taken from sites other than those recommended by the American Heart Association committee and during various phases of forced respiration.

Weight loss by dieting, limitation of activities and the use of vasodilator drugs has apparently been beneficial to this patient, as he rarely experiences precordial discomfort which is less intense if it does occur.

This case illustrates an instance in which the

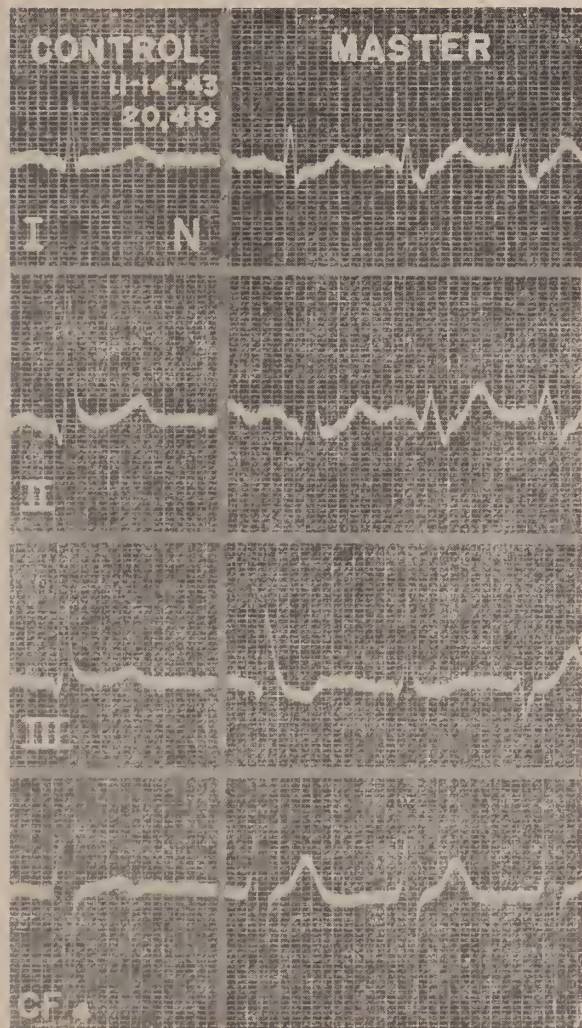


Fig 10.—Case 2. Normal control electrocardiogram. After the double standard "2-Step" Test (42 "trips" in 3 minutes) there was a depression of all RS-T segments and the appearance of many aberrant KRS complexes of ectopic ventricular origin.

Master exercise test offered objective evidence consistent with coronary insufficiency before sufficient myocardial change had occurred to be evident in the electrocardiogram at rest.

Case 3.—Mr. H. F. N., an oil company agent, aged 44 years, was seen on November 11, 1943, hav-

ing been referred to a member of the staff for an evaluation of his cardiac status. Three years previously this patient was beset with weakness and a tendency to fatigue precipitated by a few hours of desk work. In March, 1943, he had an attack of marked dyspnea and "palpitation" after walking up a flight of steps and, thereafter, he experienced many nocturnal episodes of "suffocation", relieved by "jumping" out of bed.

In May the patient became conscious of a sub-sternal "pressure" pain associated with exertion and relieved by rest or nitroglycerine. The pain was limited to the sternal region and was not accompanied by shortness of breath. At that time, the patient consulted a heart specialist in an Eastern city who interpreted an electrocardiogram as showing "some evidence of coronary sclerosis". He was advised of his "condition" with instructions to "reduce his protein consumption", to "eat moderately of meat three times a week" and to "take fifteen grains of potassium iodide three times a day". However, no improvement was noted.

A review of systems revealed that the patient had a "constant aching pain" in the dorsal region since the onset of the present illness. He felt that this backache was not associated with the precordial discomfort. The past history indicated an attack of mumps in early life.

Physical examination showed a well developed and nourished middle-aged man who complained of numbness in the left arm when that limb was abducted. Bilateral atrophy of the testes was the only other abnormality found. The systolic blood pressure was 125 mm. of Hg; diastolic, 90 mm. Hg. The eye grounds and peripheral vessels revealed no abnormalities. The Wassermann and Kahn tests were negative. Urinalysis and routine blood studies were normal. X-ray studies showed minor hypertrophic changes of the dorsal spine and a calcium deposit in the mediastinum. Orthodiagnosis demonstrated a measured frontal plane of 101 sq. cm. to a predicted plane of 102 sq. cm. (see Fig. 11). A routine electrocardiogram was within the limits of normal variation.

A diagnosis of cardiac neurosis was made which was based on the above findings and an evaluation of the patient's personality.

Further electrocardiographic studies consisting of unipolar chest, limb and esophageal tracings (see

Fig. 12), a double standard Master "2-Step" Test, requiring forty-four "trips" in three minutes, and the

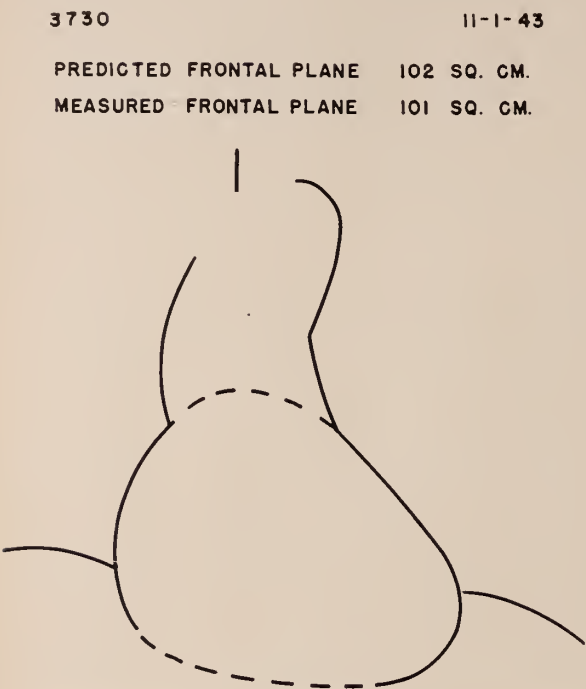


Fig. 11.—Normal orthodiagram of Case 3.

DISCUSSION AND SUMMARY

The foregoing discussion, technical as it may seem, is not intended to cloud the issue but rather to clarify certain new fields in electrocardiography. Further, it is obvious that the electrocardiogram, at best, is only a laboratory procedure and that one good history is vastly more important in many instances than a series of electrocardiographic tracings. Clinical decisions should be heavily weighted in favor of the history. However, added objective evidence of the type described here often helps the physician to arrive at a more accurate conclusion in certain obscure cases.

The special electrocardiographic tests, herein described, have not been emphasized because it is believed that they will necessarily supplant conventional forms of electrocardiography but rather because they add to and supplement the more usual electrocardiographic methods. Often, as demonstrated in Case 1, the classical bi-polar limb electrocardiograms fail to yield the desired information. Obviously the question here was one of paroxysmal heart pain versus referred pain from an old lesion of the spine. Relief could not possibly result from an operation designed to relieve heart pain if the

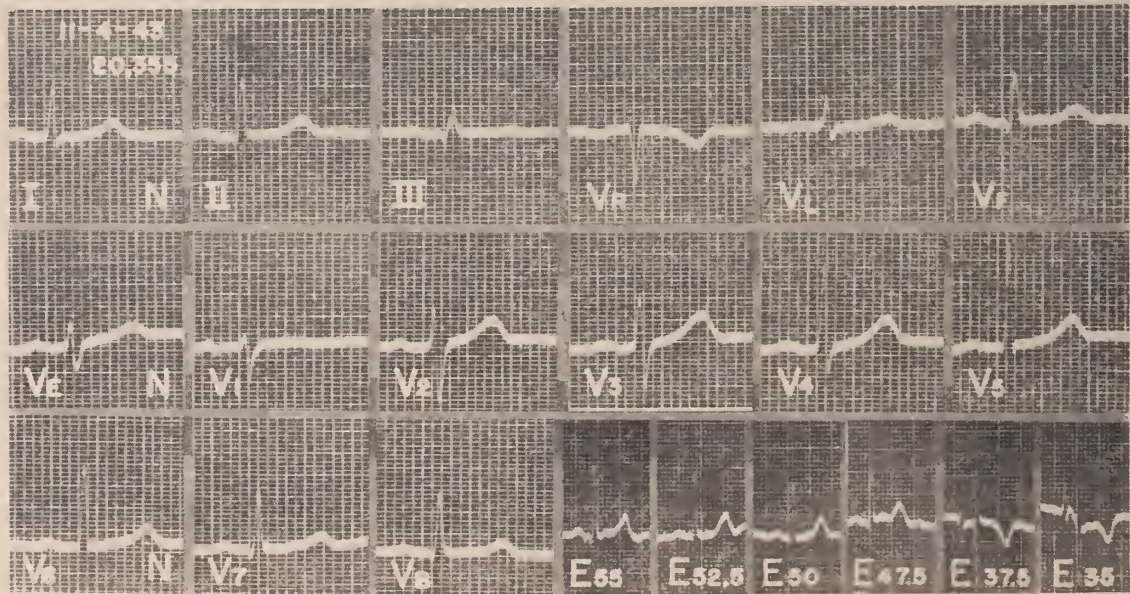


Fig. 12.—Case 3. (H.F.N.). A 44 year old male office worker. Classical bipolar limb, unipolar limb, chest and esophageal electrocardiogram. Esophageal tracings 55 through 47.5 from ventricular levels, 37, and 35 from auricular levels. All are normal.

Levy Anoxemia Test (old method) revealed no electrocardiographic abnormalities. Also exercise caused no discomfort or significant shortness of breath.

source lay in a spinal lesion situated well below the somatic area ordinarily represented in angina pectoris. Therefore, an accurate decision was impera-

tive. The esophageal electrocardiogram and the Master Step Test proved the key to an obscure problem, the operation was done, and the patient largely relieved of his anginal syndrome.

Incidentally in this patient the unipolar limb electrocardiogram suggested abnormalities of the myocardium not evident in the classical bipolar limb electrocardiogram.

Again, in Case 2, the patient could not possibly believe that he had developed heart disease. He felt that good health was his forever and the necessity for curtailing his activity could not be adequately impressed upon him until he was confronted with objective evidence. It goes without saying that the physicians in this particular case felt more confident when the objective evidence was forthcoming.

A sharp contrast to the previous reports is noted in Case 3. The patient had been told that he had heart disease, had fixed the idea in his mind, and needed a series of strenuous and convincing studies, in addition to psychotherapy. Further, the physician who saw the case last, in this particular instance, was in a difficult position as he had to disprove a previous diagnosis. Let it be emphatically stated that electrocardiographic studies were not considered as unequivocal but they were at least thorough, and the final decision against heart disease was strengthened thereby.

The advantages of chest leads have been roundly discussed in the past ten years and it is believed that the advent of the unipolar lead will, definitely, increase the accuracy of this type of study. Add to this the fact that the esophageal lead enables the clinician to study that portion of the heart heretofore unavailable for semi-direct electrocardiographic studies and the diagnostic value of the electrocardiogram becomes further enhanced. In a recent study of a patient, the first objective evidence of heart disease was obtained from an esophageal lead. This proved to be of great value as the history had been extremely confusing. Finally, with the additional information supplied by the esophageal lead, a correct diagnosis was made and subsequent events largely anticipated.

In view of this and many other similar incidences, it appears that the adoption of these newer techniques in certain obscure cases will lead to the avoidance of many unpleasant surprises. It is not contended that a cumbersome and detailed routine

should be used in every case. Often the history alone is enough to assure the clinician that no such detailed study is necessary. On the other hand, many of us have looked forward to the day when some objective study could be made in obscure problems involving the anginal syndrome. Whereas the millennium has certainly not arrived in this particular field, it does appear that the procedures outlined above have made a step forward. This summary of the newer electrocardiographic techniques has, therefore, been submitted, illustrated by three case reports in the hope that this description may save others time and trouble. The Master Step Test, especially, should be available to anyone who is a student of electrocardiography. It appears to be of much practical value. Again, it is important to note that it is not 100 per cent effective in picking out patients with the anginal syndrome. In fact, it may fail even when other evidence points almost unequivocally to this diagnosis. On the other hand, a positive test does suggest a significantly diminished coronary blood flow.

Physicians who are fortunate enough to have the Levy apparatus can combine a series of studies, including the Master Exercise Test and the Levy Anoxemia Test, and will obtain a higher percentage of objective positives in a series of suspected anginal cases.

The Master Step Test and the Levy Anoxemia Test are both standardized functional tests of the coronary reserve, within limits as yet undefined, that give objective evidence consistent with a diminished coronary flow in a significant portion of patients with angina pectoris. These procedures are also applicable to patients with coronary insufficiency without angina of effort. For reasons that are not understood, many instances arise wherein induced anoxemia may cause an abnormal electrocardiographic response while that following exercise is negative and vice versa.^{34,39,49} Thus, as noted above, when both procedures are available, the chance of obtaining objective evidence of coronary insufficiency is greater than with only one. Caution should be observed in the application and interpretation of these two functional tests as injudicious use or the expectation of unreasonable dividends may cause them to fall into disrepute.

It is to be emphasized that a negative finding in any or all of these procedures by no means rules

out the presence of either coronary artery disease or other forms of heart disease. The electrocardiogram is the electrical reflection of physio-chemical processes in the myocardium alone and, with the exception of the cardiac arrhythmias, is a non-specific diagnostic procedure. Innumerable intrinsic and extrinsic cardiac factors^{50,51} are capable of influencing the form of the electrocardiogram and only when an almost perfect correlation exists between the form of the electrocardiogram and other physiological and clinical conditions can the true significance of this procedure be evaluated. Certainly at this time, electrocardiography should be regarded as only another laboratory test.

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National Venereal Disease Control Conference.

A national venereal disease control conference will be conducted under the auspices of the United States Public Health Service at St. Louis, Missouri, November 9, 10 and 11. Leading experts on venereal disease control from the United States, and from some other nations, will consider international and post-war venereal disease control, and other specialized subjects such as new methods of treating the venereal diseases, diagnosis, epidemiology, education, and moral, social, and community influences. State and local health officers, venereal disease con-

trol officers, practicing physicians, and others engaged in venereal disease control activities are invited to attend. Meetings will convene in the St. Louis Medical Society Building at 3839 Lyndell Court.

The 1944 conference will be the third national venereal disease control conference. The first, conducted in 1936, in Washington, resulted in establishing the national venereal disease control program which has been expanded and continued to the present time. The second conference was conducted at Hot Springs, Arkansas, in 1942, to consider war-time venereal disease control.

HISTAMINIC CEPHALGIA WITH SPECIFIC THERAPY*

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In 1937 Horton first described at the Mayo Clinic a new syndrome of vascular headache known as Histaminic Cephalgia. His observations have established this specific type of headache as a distinct clinical entity, classical in its symptomatology and unique in its response to histamine therapy.

Histaminic Cephalgia is characterized by a unilateral headache which usually begins in the later decades of life, is of short duration as it generally lasts less than an hour and often terminates suddenly. It tends to awaken the patient at night and is frequently eased by assuming the sitting position or by standing erect. It is associated with profuse watering and congestion of the eye, unilateral sweating of the face, stuffiness of the nostril, increased surface temperature and often swelling of the temporal vessels of the involved side of the head.

Pain is the outstanding complaint. It is constant, boring and burning. The pain is not confined to the distribution of any cranial nerve but has a tendency to conform to the ramifications of the external carotid artery. In the first stages of the attack compression on the common carotid artery frequently gives relief. References have been noted regarding the relationship of the taking of alcohol to the production of the headache. On account of the frequency of these headaches at night many patients had slept propped up on pillows to allay the acuteness of the discomfort. Horton was able to induce these attacks of headache by the subcutaneous injection of .1 to 1.2 mgm. of histamine. Patients were unable to distinguish between induced and spontaneous attacks and it was never possible to create an attack of this character by giving histamine to a normal person.

In the treatment of this syndrome histamine di-phosphate is the drug of choice. Desensitization is carried out by daily subcutaneous doses beginning with .25 c.c. and adding .05 c.c. each day for approximately twenty doses. Should any slight reaction, such as blushing, follow an injection, the next dose should be reduced 50 per cent. An effort is made to bring the resistance up to 1 c.c. without any subsequent reaction. A maintenance dose is given once or twice weekly until immunity is established. The spectacular manner in which patients respond in-

dicates that histamine treatment is as specific for this syndrome as insulin is for the treatment of diabetes.

CASE REPORT

A white male, age 42, was first seen in October, 1941, with a chief complaint of headache. His previous history was entirely negative.

This patient stated that he had been subject to periodic attacks since 1925, and during this period had had extractions of teeth, removal of tonsils, drainage of maxillary sinus and section of nerve above his right eye without relief. These headaches were prone to come during the night, although at times they would develop during the day. The pain generally had its origin near the top of the head and then radiated down over the right temple and eye to the region of the right antrum. He described the pain as a burning, drawing sensation, and was associated with extreme lacrimation and perspiration over the right side of the face. During the attack he had spasm of the muscles around the right eye, as well as a blockage of the right nostril accompanied by a profuse aqueous discharge. He found that sitting up would tend to lessen the severity of the pain but leaning over intensified it. These attacks generally ceased after a period of two or three hours. During the three weeks prior to his examination the headaches, however, had been more or less continuous day and night with only short intervals of relief.

Physical Examination: This individual was a healthy looking man with no evidence of emotional imbalance or nervous tension. There was a scar over the right eye as a result of a nerve resection. Extrinsic and intrinsic muscles of the eyes were normal and there was no abnormal tension of the eye ball. All cranial nerves were normal. There was no nasal obstruction, throat was clean and all teeth had been removed. No adenopathy. Heart and lungs clear. Hgb. 100 per cent; RBC 4,440,000; WBC 6,600; Sed. Rate 9; Wassermann—negative; differential—negative; and urinalysis—negative.

A diagnosis of Horton's Histaminic Cephalgia was made which was confirmed by a typical reproduction of his symptoms following an injection of histamine. Desensitization was carried out over a period of several weeks, starting with injections twice daily and gradually increasing the amount and lengthening the interval between doses. On account of his sensitivity it was necessary to begin with 1-500 dilution. The relief from his headaches was prompt and, contrary to the majority of the cases reported, he has remained entirely well without maintenance doses. This patient was seen on April 19, 1944, at which time he reported that he had been entirely well since the treatments were discontinued.

Histaminic Cephalgia is a distinct clinical entity and, according to Horton,† over ninety per cent are successfully relieved by specific immunization.

*Read before Richmond Academy of Medicine, April 25, 1944.

†Horton, Bayard T.: *J.A.M.A.*, 116; p. 377; February 1, 1941.

TUBERCULOSIS IN THE AGED*

C. L. HARRELL, M.D., F.A.C.P.,
Norfolk, Virginia.

For many years tuberculosis has been considered a disease of youth, affecting mainly those between fifteen and forty-five years of age. It is the feeling of the writer that the age of expectancy has been greatly increased, as many more patients beyond the age of fifty now coming up for examinations are found to have tuberculosis than many years ago.

In my office since January 1, 1942, until September, 1943, a period of twenty months, ninety-nine new patients were diagnosed as having tuberculosis. A majority of these had not been told previously they had the disease. Of this number, twenty-seven, or 27.2 per cent, were fifty years of age or older. Eleven of these were between the ages of fifty and sixty and thirteen were above sixty.

With these figures in mind, by various means I tried to find if others were meeting with a similar experience. The Anti-Tuberculosis League Clinic of Norfolk states that thirty cases were found to have tuberculosis between July, 1940, and July, 1942, that were beyond fifty years of age, sixteen white and fourteen colored. The Tidewater Memorial Hospital reports that out of three hundred and ninety admissions, eighty were beyond fifty years of age. The Chicago Municipal Tuberculosis Sanatorium admitted 1,154 patients in 1940; of this number one hundred and fifteen were over fifty years of age.

In trying to obtain comparative figures with twenty to twenty-five years ago, I found it very difficult, as very few figures were available in 1915. The National Jewish Hospital admitted four patients over fifty years of age in 1915, while in 1940 they admitted twenty-one. In 1915 our State Sanatorium at Catawba admitted three hundred and sixty patients, and, of these, twelve, or 3.3 per cent, were over fifty years of age. In 1940 they admitted five hundred and fifty-five patients, with sixty-two, or 11 per cent, over fifty years of age. At Blue Ridge Sanatorium, of those discharged in 1921, 6 per cent were over fifty years of age, but in 1940 it had risen to 18 per cent. In 1942, our State Department of Health reported four hundred and ninety-four deaths

from tuberculosis beyond fifty years of age.

In Virginia in 1922 there were four hundred and twenty-five new cases reported in persons over fifty-years of age. In 1942 there were nine hundred and eight new cases reported in persons forty to fifty-nine years of age, and two hundred and forty-one over sixty years of age. The total number of beds for all forms of tuberculosis in the entire state is only 1,624. The cases reported over forty years of age were 1,050 in 1942 alone.

TABLE I
1922 Tuberculosis Deaths Reported from Eighty-eight
Virginia Counties

	WHITE	COLORED	TOTAL
Male -----	352	382	734
Female -----	479	479	958
			1,692

1922 Tuberculosis Deaths Over 50 Years of Age

	WHITE	COLORED	TOTAL
Male -----	141	72	213
Female -----	152	60	212
			425

1942 Tuberculosis Deaths Over 50 Years of Age

	WHITE	COLORED	TOTAL
Male -----	187	95	282
Female -----	143	69	212
			494

New Cases Tuberculosis Reported in 1942

	AGE 40-59		AGE 60 AND OVER	
	MALE	FEMALE	MALE	FEMALE
White -----	363	207	111	83
Colored -----	140	99	24	23
	503	306	135	106
SANATORIUM BEDS	WHITE		COLORED	TOTAL
State -----	770		269	1,039
Municipal -----	393		192	585
	1,163		461	1,624

In 1915 in the State of Maryland, there were five hundred and thirty-four deaths reported from tuberculosis in individuals beyond fifty years of age. In 1940 it had dropped to three hundred and ninety-two. In North Carolina in 1915 there were seven hundred and five deaths from tuberculosis in individuals over fifty years of age; white, four hundred

*Read before the annual meeting of the Medical Society of Virginia, at Roanoke, Va., October 25-27, 1943.

and fifty-three; colored, two hundred and fifty-two. In 1940 there were only three hundred and fifty-eight; white, two hundred and twenty-one, and col-

form it takes. The writer feels that there is a vast difference clinically in the tuberculosis seen in the two age groups. In the young adult, the disease is

TABLE II.—PULMONARY TUBERCULOSIS
Deaths, all ages and age 50 and over, and proportion at age 50 and over,
United States and certain States, 1915 and 1940

AREA	1915		% DEATHS AGE 50 + TO DEATHS	1940		% DEATHS AGE 50 + TO DEATHS
	PULMONARY TUBERCULOSIS DEATHS			PULMONARY TUBERCULOSIS DEATHS		
	ALL AGES	50 AND OVER		ALL AGES	50 AND OVER	
U. S. Death						
Registration Area	82,853	17,386	21.0	55,576	19,217	34.6
White	70,514	15,778	22.4	39,888	16,579	41.6
Colored	12,339	1,608	13.0	15,688	2,638	16.8
California	4,754	1,092	23.0	3,544	1,440	40.6
White				3,069	1,305	42.5
Colored				475	135	28.4
Connecticut	1,445	281	19.4	543	222	40.9
White				504	216	42.9
Colored				39	6	15.4
Maryland	2,220	491	22.1	1,344	418	31.1
White	1,388	377	27.2	672	307	45.7
Colored	832	114	13.7	672	111	16.5

ored one hundred and thirty-seven. I am unable to explain this drop except that western North Carolina used to have many private sanatoria for treating tuberculosis, and patients came from far and near, believing that the climate played a great part in the treatment and cure of tuberculosis. Since this theory has been exploded, more patients are taking treatment nearer home.

In the Death Registration Area in the United States for 1915, the rate was 21 per cent over fifty years of age. In 1940 it had risen to 34.6.

The tuberculosis death rate in Virginia for 1915 was 182.4. In 1942 this had dropped to 55.9. All these figures prove that people with tuberculosis are living much longer than formerly.

The reason may be that the standard of living has been greatly increased; better food, better clothing and better housing for all classes. The building and developing of the sanatoria and all they stand for in the method of education, treatment and follow-up studies, has been the biggest contribution in lowering the tuberculosis death rate. Immunity also has played a vital part in increasing the expectancy of tuberculosis. The longer a people live with and fight tuberculosis, the better its individuals seem to resist the disease.

Various authors agree that the type of tuberculosis seen in the aged is different from that seen in the young adult. They differ, however, as to the

usually the infiltrative type, active and progressive, yet the clinical symptoms may be mild; slight cough,

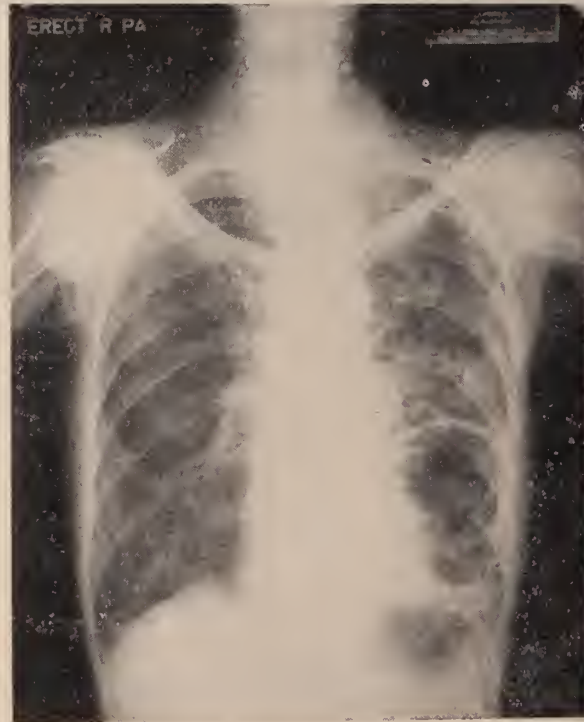


Fig. 1.—Mrs. W., living in a boarding house. Aged 65.

very little expectoration and only slight elevation of temperature, slight loss of weight, except in the acutely ill patients. If not treated, these may go

on into the ulcerative and exudative stage. If cavities develop, they are usually small and single.

A large percentage of both groups complain of a tired, weak feeling. The older group complain of a marked loss in weight, usually to the degree of emaciation; the cough is usually very severe and expectoration profuse, due to a mixed infection. The old

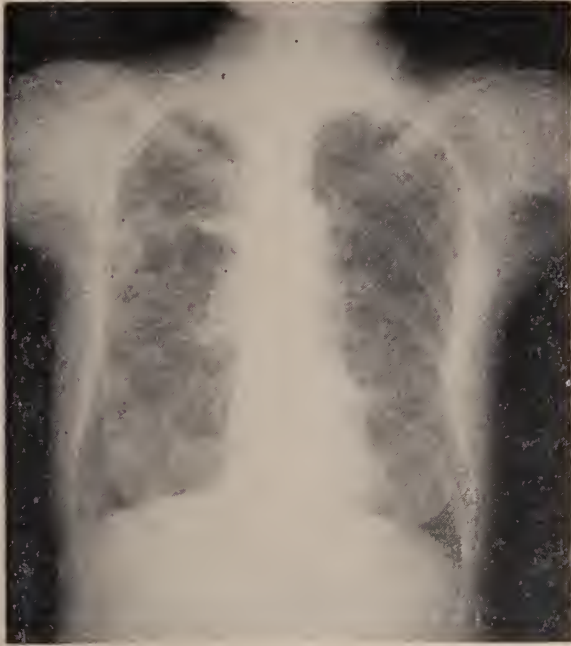


Fig. 2.—Mrs. T., housewife. Aged 67.

inactive fibroid type may not have any cough except with a cold. In the older type when cavities develop, they are usually large and multiple. There is much fibrosis and calcification. The older type may have an acute spread and develop into the pneumonic type. Shortness of breath may be due to several causes: physical exhaustion, anoxemia, as a result of asthma, atelectasis, fibrosis, emphysema, and bronchiectasis. Chronic asthmatics as a rule do not develop tuberculosis, but tuberculous patients may develop asthma, probably bacterial in origin, due to mixed infection.

Of the twenty-four cases studied, three had a systolic blood pressure over 150. Nine of these gave a history of expectorating blood, from as much as a streak to a mouth full, but none of them gave a history of having a large hemorrhage. This was a little over 37 per cent. These figures correspond with some figures published by the writer a few years ago. Sixteen of the group were classified as chronic

fibrosis, probably without cavity formation, or if present they were very small. Five of the group were classified as chronic infiltration, active, with cavity formation, and two as the acute pneumonic type. One of these died in about three months; the other is responding to collapse therapy. Of this entire group, there were six that gave shortness of breath and cough as their chief complaint. It was difficult to differentiate some of this from true asthma and anoxia, due to the previously mentioned causes.

The acute case still under treatment might be of some interest. This is a white male, age fifty-eight, by occupation a salesman who had not been feeling well for about two months. He was taken with a chill, followed by a high fever. It was thought he had pneumonia, probably of the virus type. He was given one of the sulfa drugs for about ten days with no benefit; one sample of sputum was negative for



Fig. 3.—Mr. W., salesman. Aged 58.

acid fast bacilli. X-ray of his chest revealed an infiltration of the upper half of the left lung, rather suggestive of a tuberculous pneumonia, though the roentgenologist, in view of the man's age and acute onset, thought virus pneumonia should be considered. I saw him in the third week of the disease

and the diagnosis was somewhat doubtful, though tuberculosis appeared most probable. A daily examination of the sputum was ordered, and the sixth specimen was found loaded with tubercle bacilli. He was started on collapse therapy; that is artificial pneumothorax, and his temperature came down in about two weeks. I cannot over-emphasize the importance of examining numerous samples of sputa where tuberculosis is suspected. A negative sputum means nothing. A positive sputum proves tuberculosis to be present, though the patient may not be acutely sick at the time.

Where numerous sputa have been negative, I would suggest that culture be attempted. A. W. Bengtson, of Catawba Sanatorium, reports that he has obtained 31.16 per cent positive cultures from the sputa that were found negative on smear over a period of two years. On pleural effusion he has gotten a positive culture in 57.2 per cent over a period of eight years that were negative to smear. I feel this is an important step forward in examining sputa and pleural effusions, and should be done when possible.

NOTE: Since reading the above paper, one of the cases reported has passed away. He was a man, sixty years of age, who had returned from the sanatorium, apparently in excellent shape, after spending about six months. He had gained about fifteen pounds in weight. About three weeks after being at home, he developed acute upper respiratory infection, high fever, accompanied with uremia. He died in about four days with terminal pneumonia.

This man did not die a tuberculosis death, and it will not be classified as such. I feel this is the way many of our chronic tuberculous cases terminate. Consequently, the statistics do not show the real number of deaths from tuberculosis in the aged.

DISCUSSION

Knowing we have these old people with tuberculosis, and the number seems to be increasing, what can be done about it? Those of us who have worked with tuberculous patients know that it is almost impossible to teach an elderly patient to protect himself or others. They cough, sneeze and expectorate at will, without making any attempt to cover their mouths, or to destroy the sputa. Since only a small percentage are sick enough to be confined to bed, this makes them all the more dangerous. I cannot agree with Norton that most old people with tuberculosis succumb rather rapidly. I feel that there should be sufficient beds in our state and municipal sanatoria to take care of all persons with active

tuberculosis, or with a positive sputum. I know it is the policy of the state sanatoria to take first the young and the early cases, the ones that can be salvaged and restored to health, and leave the old and advanced cases to shift for themselves. I have always felt that this was the weakest link in our tuberculosis program. We should try to destroy the source of the infection, while at the same time we are trying to treat those infected. It is not scientific, not economical, and not to the best interests of the public for the old people and the advanced cases to go untreated. I feel they all should be isolated, either in sanatoria or convalescent home.

In conclusion let me emphasize the importance of examining carefully all old people with a chronic cough, and study the sputum by smear and culture. The number of old people with tuberculosis is on the increase. More beds should be provided for their care, and all should be isolated.

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PERSONAL CORRESPONDENCE

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DISCUSSION

DR. NICHOLAS G. WILSON, Norfolk: The subject presented by Dr. Harrell is very pertinent and deserves our earnest consideration. Unquestionably, today, a larger number of people over fifty years old are found to have pulmonary tuberculosis than were reported two or three decades ago. However, it does not seem reasonable that, while the mortality rate has so markedly declined, the incidence at any age should have increased. To account for the larger number of reported cases occurring in elderly people, Dr. Harrell has mentioned the progressively advancing life expectancy, increasing resistance to the tubercle bacillus, and lowering the death rate by more intelligent care of the tuberculous.

I agree with him when he tells us that as a rule most elderly people tolerate tubercular infection very well; and clinical experience seems to indicate that in this increased tolerance is found the probable reason for the greater number of reported cases in those past middle age.

It may be recalled that a few decades ago, before the X-ray film became the essential part of a chest examination, the diagnosis of chronic bronchitis was accepted at its face value and it was not until physicians generally became tuberculosis-minded that the more serious underlying condition was more frequently recognized. Present day doctors are unwilling to accept a diagnosis of chronic bronchitis with its accompanying bronchiectasis, emphysema, and often asthma, until proven by exhaustive examination.

In their monograph, Hawes and Stone quote F. T. Lord and R. C. Cabot as having said that there is no such entity as chronic bronchitis and that every such diagnosis is one mistaken for bronchiectasis, heart disease, or tuberculosis. While this opinion represents an extreme view of the matter, any opinion expressed by two such eminent clinicians must be respected.

Very few of us doubt the existence of chronic bronchitis, though we have to admit the co-existence in most cases of bronchiectasis and emphysema, and it is this usually long standing condition that all too often masks tuberculosis. Not infrequently, the X-ray film is not sufficient evidence on which to base a diagnosis, which then depends on a positive sputum.

Hawes reports one case of supposed proven chronic bronchitis in which the fortieth specimen was found loaded with tubercle bacilli. Dr. Harrell has reminded us that examination by the culture method would have shortened the period of doubtful diagnosis.

While it is possible for tuberculous infection to occur at any age, an overwhelming proportion takes place in early life; and in those instances in which it is first discovered in late life, a carefully obtained history—especially of childhood contacts, with unexplained periods of debility accompanied by “slow fever”, malarial fever, or “walking typhoid” in early life—will likely indicate the real period of invasion.

Therefore, taking these facts into consideration, it seems probable that the principal factor involved in the apparent increase in the occurrence of tuberculosis in elderly people is greater accuracy in the diagnosis of obscure chronic pulmonary disease.

DR. R. L. RAIFORD, Franklin: I enjoyed very much Dr. Harrell's discussion of what I think is one of the most timely subjects of this day.

I especially want to emphasize Dr. N. G. Wilson's comments on chronic bronchitis of the aged. I have in mind a very respectable old white lady whom I knew had chronic pulmonary tuberculosis, but could never convince her that this was the case. She lived for over fifteen years after the onset of her cough and was able to do an unusual amount of work for a person of her age. She had many children and grandchildren and, because we could never induce her to take any form of treatment or even the most meagre precautions, she, like Dr. Wilson's colored woman, almost wrecked the family. Several died; several others were treated in the State Sanatoria and are now in various stages of health. This saintly old lady died at the ripe old age of eighty-five after having become the unrealized source of tuberculous infection of many bright young people.

DR. B. B. BAGBY, JR., Richmond: I have no figures except on white men. In my white men's ward at the hospital I have approximately fifty-three men, of whom at least twenty are over fifty years old.

DR. HARRELL, closing discussion: I wish to thank Drs. N. G. Wilson, Raiford and others for their discussion.

The State Sanatoriums are doing a great job in the fight against tuberculosis. I hope they will continue to do an even greater job. However, there is one thing I do not understand—why patients, after they are discharged from the sanatorium, do not consult their physicians when they return home. I dare say not 25 per cent of the ex-sanatorium patients consult physicians regularly unless they are pneumothorax cases or are taken acutely sick. I get the impression that they get a smattering idea of tuberculosis while in the sanatorium and think they know more than the average practitioner and wish to be their own doctor.

If possible, it should be emphasized on them as strongly as possible the importance of having a regular check-up.

In regard to old cases being in the homes, we know that children are very susceptible to tuberculosis, and as a rule they can stand one infection fairly well, but they cannot stand constant re-infection. Therefore, I feel it necessary that the chronic case should either be isolated in the sanatorium or in a convalescent home. If they can produce, let them continue to work, but keep them under supervision and in isolation from their families and others.

MEDICAL PROGRESS DURING THE LAST SIXTY YEARS*

M. O. BURKE, M.D.,
Richmond, Virginia.

Sixty years ago medical education in the United States was hampered by too many schools with a low curriculum. There were five medical schools in Louisville, Kentucky, at that time.

There were no educational requirements for entrance to these schools, and the courses consisted of two years of six to eight months each year. Some of the schools allowed their students to graduate in one year if they could pass the examinations. The subjects taught were:

Theory and Practice of Medicine.

General Surgery.

Gynecology and Obstetrics.

Chemistry.

Materia Medica and Therapeutics.

Physiology.

Anatomy.

Embryology, Histology, Pathology and Bacteriology were referred to, but little time was allotted to them.

"In 1890 there were 133 medical schools with 4,454 graduates. In 1905 there were 160 medical schools with 5,606 graduates."

The Council on Medical Education succeeded in raising the standard of medical education and "since 1933 there have been in the United States sixty-six approved four year schools, one offering only clinical courses and ten schools of the basic Medical Sciences". "In the seventy-seven medical schools in the United States, including the school of the basic medical sciences, there were 21,379 students and 5,275 graduates in 1941."¹

The graduate in medicine sixty years ago was only an apprentice in medicine; by many years of close attention to clinical experience, hard work and post-graduate courses he became a doctor.

Many of our graduates went to England, France and Germany to finish their education and brought back the knowledge gained to improve our work in the United States.

During the last seven years our medical teaching has been sought by the graduates of the European schools.

*Prepared for Medical Society of Virginia meeting in Roanoke but, as unable to attend, read before Richmond Academy of Medicine, November 23, 1943.

The doctor sixty years ago knew little of the causes of disease; his mission was to cure his patient if he could, and to relieve suffering as much as possible.

He was more intimately associated with his patients than the average doctor of today; frequently his sympathetic advice was worth more than the medicine he prescribed. He knew the reactions of his people in health and in sickness and was a close student of human nature. Having no instruments of diagnostic precision, his five senses were highly developed and his general comprehension was acute: he learned more medicine from clinical experience than from books.

These were the "horse and buggy days" but he often went on foot and carried his saddle bags on his shoulder. He filled his own prescriptions and used but few drugs and these for their therapeutic effect.

He met emergencies as they arose as best he could with faith in himself as an agent of a Higher Power.

Sir William Osler, a product of the old, and a pioneer of the new school of medicine, graduated in Canada when medical teaching was at a lower ebb than it is today; continued his studies in Germany, became Professor of Clinical Medicine in the University of Pennsylvania, then Professor of Medicine in John Hopkins Medical School and Hospital.

In 1905 he left his native land and adopted home for a more ancient Chair of Medicine in Oxford, England. He always kept a little ahead of the times. He made himself master of every new discovery in medicine. His *Practice of Medicine*, published in 1895, was up to date in etiology, morbid anatomy, symptomatology, diagnosis and prognosis.

He was the greatest teacher of internal medicine in America and in Europe.

The medical student today has all of the scientific medical discoveries since Aesculapius, collected, condensed and revised for his instruction. He has four years of carefully supervised teaching, two years of hospital work for assimilation before he is called upon to demonstrate his ability as a doctor. He has yet to correlate his scientific knowledge with common sense and human nature and he must realize

that he is called upon to treat an individual that has a disease instead of a disease that has the individual; else he may cure the disease but kill the patient.

It was once thought that disease developed spontaneously in the body.

The old idea that humors were the seat of disease was superceded by the theory that the nervous system controlled disease.

"In 1801 Bichat claimed the seat of disease was not in the organs but in the tissues or fabrics of which they were composed."²

Hahnemann, the father of homeopathy, taught that the duty of the physician was to heal by giving remedies in minute doses that produced the same symptoms as the disease, and to disregard the cause of the disease.

At the beginning of the nineteenth century medicine was a theory and the practice of medicine an art. By the middle of the nineteenth century the theory of medicine was rapidly changing and science began to hunt for a definite cause of disease.

The study of physiology and pathology stimulated a research for the cause, cure and prevention of contagious diseases.

In the year 1796 Jenner vaccinated a boy 8 years old with cowpox and after his recovery, with smallpox, with the result that he did not take smallpox.

Oliver Wendell Holmes' classical paper on the contagiousness of Puerperal Fever appeared in the *New England Quarterly Journal of Medicine* in 1843.

"Louis Pasteur's discovery that living organisms are the cause of fermentation is the basis of the whole modern germ theory of disease and of the antiseptic method of treatment."³

Koch in his bacteriological research discovered the cause of tuberculosis in the year 1882 and other germs later.

Lister established the importance of antiseptics. Jenner, Pasteur, Koch and Lister laid the foundation of preventive medicine. Bacteriology, chemistry, dietetics, sanitation, endocrinology and immunology have built and are still building the superstructure.

The latter part of the last century, filled with the discovery of the cause of contagious and infectious diseases, continued into this century and was no less startling than the means of preventing those diseases and the specific cures for others.

There has been a revolution in diagnosis.

The four cardinal methods of diagnosis are just as important as ever.

Mentally dividing the human body into methodical regions or zones and separating the abnormal from the normal findings, carefully compiled and condensed histories and from these making a tentative diagnosis—to be verified by various laboratory findings.

The laboratory has grown from a shelf or table with an alcohol lamp, a microscope and a few reagents and test tubes to a well equipped department with trained technicians.

The first x-ray picture that came to America in 1896 was that of a hand on one finger of which was a ring. It was thought that the x-ray would be valuable in diagnosing fractures and foreign bodies. Roentgenology is today an important specialty. Cardiology is another progress.

The bronchoscope and esophagoscope, introduced by Jackson, are playing a most important part in medicine.

The cystoscope is indispensable to the urologist.

Tuberculosis headed the list of killers for many years. Koch discovered the cause, *Bacillus tuberculosis*, 1880-1882. No specific cure has been found.

By sanitation, sunlight and common sense thousands have been saved from infection, and many of those infected have had their usefulness prolonged.

Malaria, the scourge of the South since the settlement at Jamestown, has been greatly weakened but not quite subdued in the United States. It "still rages in China, India, and the tropical islands". Malaria existed in the old world more than 2,000 years ago. "The Surgeon General says that 800,000,000 people suffer from malaria every year".⁴ For several centuries it was thought that malaria was contracted from the miasma from swamps.

The specific remedy for malaria was known 240 years before the discovery of the plasmodium in the blood by Laveran in 1880. Fifteen years later Sir Donald Ross demonstrated the developmental changes of the plasmodium in the mosquito, and three years later Bignami, Basteaneli and Grassi demonstrated by actual experiment upon man that anopheline mosquitoes transmitted malaria.

Quinine, isolated from *Cinchona* bark 1820 by Pelletier and Courventou, has been the sheet anchor in treating malaria. Plasmochin is used with quinine

to kill the gametocytes. Atabrine has lately been introduced as a specific for malaria, but we are still dependent upon quinine.

Diphtheria is caused by a bacillus described by Klebs and Löffler in 1883-84. The death reaper continued to gather his harvest for nine years until Behring in 1892 dulled the scythe with an antitoxin serum for diphtheria and introduced the possibilities of serum therapy.

Yellow fever originated in West Africa, was carried to Brazil and the tropics and appeared in New York 1668. There were epidemics of yellow fever in the United States from 1797 to 1899. These epidemics occurred during the Summer and Fall, disappearing with the coming of frost and freezes, which led to the belief that mosquitoes conveyed the disease. Sanarelli claimed that the *Bacillus icteroides* was the cause of the disease. "Agramonte did not believe that the specific germ of yellow fever was yet discovered."⁵ Many mistaken claims of the etiology of yellow fever were made and many investigators lost their lives.

"In 1901 it was demonstrated that the cause was a filterable virus in the body fluids and is conveyed by the *Aedes Egypti* mosquito."⁶

We owe an everlasting debt of gratitude to Walter Reed and his co-workers who in 1900 demonstrated conclusively that the disease was conveyed by the mosquito; and to General Gorgas for his brilliant work of sanitation in Havana, Cuba, and the Canal Zone. "The work in Havana was begun in February, 1900, and the last case of yellow fever occurred in September, since which date the city has been practically free from yellow fever."⁷

In Panama conditions were such that it took sixteen months before the disease disappeared. "There has been no return."

"An effectual vaccine for immunization against yellow fever has been obtained."⁸

Typhoid fever, an enemy for more than 200 years, has been practically subdued.

In the year 1880 Eberth discovered the bacillus typhosus. By the use of disinfectants and sanitation the number of cases was greatly reduced. In 1909 Wright and Pfeiffer introduced a specific inoculation. In 1916 para typhoid was added and, since compulsory inoculation was established in the Army and many of the schools, the disease has almost disappeared.

As to pneumonia, we have made some progress in the treatment of this disease with fresh air and oxygen, the typing of pneumococcic and serum for the special types. Since 1936 the sulfa drugs alone or in combination with serum have saved many lives.

Syphilis is claimed by some writers to have been carried by Spanish sailors from Hayti in 1493. Others claim that the disease existed in Europe and Asia two thousand years ago.

"All efforts at discovering the cause failed until in 1905 Schaudinn demonstrated the presence of a Spirochete in the lesions."⁹

"In 1911 Ehrlich announced the discovery of an arsenical compound with special spirocheticidal power."¹⁰

Wassermann introduced his complement fixation test. Modified arsenicals and bismuth have been added since 1910. The States are requiring a test and treatment of all suspected cases and a serological test of all applicants for marriage license.

Banting and his co-workers have made the paths for diabetics much smoother. The blood sugar and sugar tolerance tests have enabled us to more accurately regulate their diets.

Minot and Murphy (1926) introduced the liver diet for pernicious anemia, and Minot and Cohn (1927) developed an effective liver extract which controls this much dreaded condition.

Hookworms sucked the blood of the lower classes of people in all warm climates for 300 years before active steps were taken to eradicate the disease. Stiles began his valuable investigation and crusade against hookworm 1901. By sanitary and therapeutic measures the disease can be controlled. Thymol has been replaced by carbon tetrachloride as more efficient in clearing the worms from the intestines.

Deficiency diseases can be greatly benefited or cured by vitamins if treated in the early stages. They can be prevented by eating the proper food. Take pellagra, for instance, as an example of the deficiency diseases:

"Pellagra was endemic in Spain 1735, existed in Italy in 1750, and described in 1771 by Frapoli who gave it the name pellagra (roughskin)."

"The disease generally is supposed not to have been recognized in this country until 1906; however, sporadic cases were reported in Massachusetts and New York in 1860."¹² Dr. Searey, of Alabama, re-

ported the disease during the latter part of the 19th century or early in the 20th century.

It was first thought to be due to spoiled maize, then due to a diet of fat meat, corn bread and molasses, "later to deficiency in protein supply".⁸

Clinicians have obtained brilliant results from nicotinic acid. Vitamin therapy is a progress of this century.

We have diseases arising from hyper and hypo secretions of the endocrine glands.

Exophthalmic goiter is characterized by disarrangement of the thyroid gland and hyper function. In 1923 Plummer pointed out that iodine has a remarkable effect in this disease, and in preparing patients for operations.

Myxedema and cretinism, examples of hypothyroidism, are benefited and sometimes cured by feeding thyroid extract.

Gigantism is due to hyperfunction of the anterior lobe of the pituitary gland.

Dwarfism and Simmond's disease are due to hypofunction of the pituitary gland and are sometimes benefited by active anterior pituitary preparations. Theelin, isolated by Allen and Daisy in pure crystalline form, has been a great blessing to suffering women.

"At the beginning of the 20th century the drug addicts numbered 250,000 to 300,000 in the United States. By 1912 every state except Delaware had an

anti-narcotic law. The Harrison Act became effective in 1915."¹³ Since 1900 the number of addicts has greatly decreased.

The sulfa drugs and penicillin have been the most spectacular discoveries of the present century and are playing a most important part in the present war. It is claimed that the sulfa drugs, blood plasma and penicillin have greatly reduced the death rate of men wounded in battle.

Until we can unravel the fabric that binds the physiological functions of this intricate human system and can reconcile the psychic with the mechanical, chemical, electrical and nervous control of the individual, we can not hope to relieve the patient of the numerous ills for which the doctor is consulted.

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Forum on Allergy.

The seventh annual forum on allergy will be held in the Hotel William Penn, Pittsburgh, on January 20-21, 1945. This is a meeting to which all reputable physicians are most welcome, and where they are offered an opportunity to bring themselves up to date in this rapidly advancing branch of medicine by two days of intensive post-graduate instruction.

For further information, write Jonathan Forman, M.D., Director, 956 Bryden Road, Columbus 5, Ohio.

Virginia League for Planned Parenthood.

At a meeting of the League on October 6th, Dr. H. Hudnall Ware, Jr., Richmond, was elected president. The medical advisory committee is composed of Dr. M. P. Rucker, Richmond, chairman; Dr. C. J. Andrews, Norfolk; Dr. B. B. Bagby, Richmond; Dr. Dean B. Cole, Richmond; Dr. A. M. Groseclose, Roanoke; Dr. W. R. Payne, Newport News; Dr. F. O. Plunkett, Lynchburg; Dr. T. J. Williams, University; and Dr. Ware.

CARE OF PRE-SCHOOL CHILDREN OF WAR WORKING MOTHERS—
HEALTH DEPARTMENT STUDY OF THEIR PHYSICAL CONDITIONS*

W.M. Y. GARRETT, A.B., M.D., M.P.H.,
Health Officer,
Newport News, Virginia.

Physical examinations performed upon 59 children enrolled in the two day nurseries in the city indicate that two-thirds of this cross section of our pre-school population (ages 2-6 yrs.) have physical defects which are in need of medical or dental attention. These examinations were performed by Dr. Catherine Blumberg of the city health department.

The most common defects were dental caries and diseased tonsils. Twenty children were found to need dental attention and removal of the tonsils was indicated in eleven. Other defects discovered were poor posture, glandular disorders, skin conditions, malnutrition, colds, flat feet, etc. In twenty children no defects were discovered.

The children included in this study are those whose parents are engaged in defense work. The fathers of several are in the armed services. The number examined (59) is too small to make any statistically significant statements concerning the physical health of our pre-school children in general, but Selective Service Boards have reported unusually high rejection rates at induction centers and school physicians report that school children are not in the best of physical condition as regards teeth, tonsils, nutrition, eyes, etc., when they enter school. On the basis of these facts, it would seem that a very high percentage of our "tots" are suffering from undiscovered defects, which, if discovered and corrected early, would prevent many disabling conditions of later years.

We have heard much of late of expanded social security; of "cradle to grave coverage" in Britain, and of "womb to tomb coverage" in America, as we go our friends across the sea one better. The American public has been sold on the value of pre-natal care for expectant mothers, of good obstetrics, and of medical supervision of infants. This has resulted in the saving of countless thousands of lives and the prevention of untold suffering. This job has been so well done that in many of our large metropolitan centers puerperal sepsis (infection of mother associated with childbirth) has become quite a rarity.

*Prepared for presentation to the Child Welfare Committee of the Newport News Office of Civilian Defense, and deals with the physical examinations of this younger age group of children in May, 1944.

The infant death rate has likewise experienced a tremendous reduction.

There is need for health departments in general and the Newport News Health Department in particular to strengthen and greatly expand programs for the discovery and correction of physical defects among pre-school children. There is need for health departments to continually impress upon the public, and the medical and dental professions, the importance of periodic physical examination of everyone. In no age group will the annual checkup prove more beneficial than among pre-school children. The defects discovered in this age group can for the most part be readily and inexpensively corrected.

A summary of the defects discovered in this study appears in the following table.

	White	Colored	Total
Number examined	42	17	59
Number with defects	28	11	39
Number of defects	41	15	56
Number without defects	14	6	20
Per cent having defects	67%	65%	66%
Types of defects			
Dental caries	13	7	20
Diseased tonsils	7	4	11
Skin disorders	5	0	5
Other defects	16	4	20

Parents of those children having physical defects were notified by the public health nurses and advised to consult their physician or dentist. In cases where the parents, although employed, are unable to finance the correction of these defects, the Social Service Bureau, after investigating each case, gives assistance.

SUMMARY

1. Fifty-nine children, varying in age from 2-6 years, were examined by the Newport News Health Department.
2. These are children placed in the day nurseries of Newport News while their mothers are engaged in activities connected with the war effort.
3. Two-thirds of those examined had remedial physical defects. Dental caries and diseased tonsils were the most prevalent conditions discovered.
4. There is great need for periodic examinations of pre-school children. More attention to children's dentistry must be given.

ARE SOLUTIONS OF SULFA-DRUGS SELF-STERILIZING?

F. J. VON GUTFELD, M.D.,*
Richmond, Virginia.

The question whether sulfa-drugs are self-sterilizing sounds rather paradoxical; nevertheless, only a small minority would hesitate to answer it in the affirmative.

The fact, however, that such a question can reasonably be asked involves the possibility of a doubtful or even a negative answer, at least for special cases.

to the sterile water. The sulfapyridine was contained in an ordinary card-board box. Under these circumstances it was, of course, supposed that the sulfapyridine contained living microorganisms. The purpose of the experiment was to observe whether the sulfapyridine solution would undergo "self-sterilization". It was planned to transfer a small amount of the sulfapyridine solution from time to



Photo shows the lower part of the four-ounce bottle. On top of the sulfapyridine sediment two fungus colonies.

In considering the problem two sets of facts should be kept in mind: (a) different disinfectants have different germicidal power depending on their chemical constitution, concentration, pH, temperature, etc.; (b) the resistance against the action of disinfectants varies with different microorganisms according to their kind, ability of spore-formation, etc.

The following observation seems to be noteworthy, especially in view of its practical bearing and the conclusions to be drawn.

On October 19, 1943, a four-ounce screw-cap bottle containing 80 cc. distilled water was autoclaved (20 min. at 121° C.). After cooling to room temperature, 0.2 g. of dry sulfapyridine were added

time to a nutrient medium in order to check the possibly occurring self-sterilization. The sulfapyridine solution was kept in a cabinet.

On November 23, 1943, five weeks after the solution had been prepared, the first test for sterility was scheduled. The performance of this test, however, had become unnecessary, since the solution presented the following picture: the bottle contained a crystal-clear liquid, and the white sediment of undissolved sulfapyridine bore two dark-gray fungus colonies about 3 mm. in diameter (photo from 11-24-1943).

The fungus colonies were transferred one to peptone water and the other to corn meal agar, and later identified as belonging to the genus *Hormodendrum*.

Whether the fungus was able to grow on sulfa-

*From the Department of Bacteriology and Parasitology, Medical College of Virginia, Richmond.

pyridine as its only source of nutriment, or whether the sulfapyridine powder may have contained traces of impurities sufficient for the growth of the two fungus colonies need not be discussed here, since it has no bearing on our question.

As a matter of fact, it is to be stated that a saturated solution of sulfapyridine (not previously sterilized) when prepared with sterilized distilled water in a sterilized bottle not only did not become sterile after five weeks, but even allowed the growth of two fungus colonies.

For practical purposes the conclusion has to be

drawn that certain bactericidal agents, especially the sulfa-drugs, should be sterilized by suitable methods since it is not safe to rely upon their "self-sterilization".

SUMMARY AND CONCLUSIONS

In a saturated solution of sulfapyridine in sterilized distilled water in a sterilized bottle two fungus colonies developed on top of the sulfapyridine sediment. Therefore, "self-sterilization" should not be relied upon, and the chemicals should rather be sterilized previously by a suitable method.

Annual Post-Graduate Course at University of Virginia Hospital.

Below is given the program for the post-graduate course in diseases of the eye, ear, nose and throat to be given at the University Hospital early in December:

Tuesday, December 5, 1944

- 9:30-10:30 A. M.—Interpretation of Roentgenograms.
Dr. Frederick M. Law, Roentgenologist, Manhattan E. E. and T. Hospital, New York City.
- 10:45-11:45 A. M.—Carcinoma of the Larynx, illustrated by motion picture films.
Dr. Paul H. Holinger, Assoc. Prof., Broncho-Esophagology, Dept. Otolaryngology, Illinois University.
- 12:00-1:00 P. M.—The Treatment of Acute Upper Respiratory Tract Infections.
Dr. Russell L. Cecil, Prof. Internal Medicine and Clinical Medicine, Cornell University Medical School, New York City.
- 1:00-2:00 P. M.—Lunch.
- 2:00-3:00 P. M.—The Medical Treatment of Chronic Otitic Suppuration.
Dr. John R. Page, Surgeon Director, Manhattan E. E. and T. Hospital, New York City.
- 3:15-4:15 P. M.—Successful Operations on the Nose and Throat; Indications and Management of Same.
Dr. Joseph D. Kelly, Surgeon Director, Manhattan E. E. and T. Hospital, New York City.
- 4:30-5:30 P. M.—The Practical Aspects of Fluid and Acid Base Balance in Children.
Dr. McLemore Birdsong, Asst. Prof., Dept. Pediatrics, University of Virginia.
- 8:00 P. M.—Tumors of the Bronchi, illustrated with motion picture films.
Dr. Paul Holinger.

Wednesday, December 6, 1944

- 9:30-10:30 A. M.—The Surgical Treatment of Chronic Otitic Suppuration.
Dr. John R. Page.
- 10:45-11:45 A. M.—Question and Answer Hour on Operations of Nose and Throat.
Dr. Joseph D. Kelly.
- 12:00-1:00 P. M.—Rheumatism.
Dr. Russell L. Cecil.
- 1:00-2:00 P. M.—Lunch.
- 2:00-3:00 P. M.—Interpretation of Roentgenograms.
Dr. Frederick M. Law.
- 3:15-4:15 P. M.—Bronchial Obstruction, illustrated with motion picture films.
Dr. Paul H. Holinger.
- 4:30-5:30 P. M.—Postoperative Pulmonary Complications and Their Treatment by Postural Cough, Catheter Aspiration of the Trachea and Bronchoscopy.
Dr. Marion Lawrence White, Jr., Asst. Prof., Dept. Surgery and Gynecology, University of Virginia.
- 6:30 P. M.—Cocktails and dinner at Farmington Country Club.
Address.
Rear Admiral Ross T. McIntire, Surgeon General of the U. S. Navy, Washington, D. C.

During the post-graduate course, lectures on the eye will be given on December 7 and 8. The invited faculty and the subjects they will discuss are:

- Dr. James W. White, New York—Muscular Anomalies.
Dr. Paul A. Chandler, Boston—Disorders of Lacrimal Passages, Glaucoma, and Cataract.
Dr. Wilfred E. Fry, Philadelphia—Affections of the Optic Nerve, and other subjects.
Dr. Wendell L. Hughes, Hempstead, N. Y.—Repair of Lacerations of the Lid, Socket Reconstruction, and Reconstruction of the Lower Lid.

ROCKY MOUNTAIN SPOTTED FEVER—A CLINICAL REPORT

HERMAN S. FLETCHER, M.D.,

and

JOHN P. LYNCH, M.D.,

Richmond, Virginia.

Rocky Mountain spotted fever is a severe disease with a variable mortality. No specific treatment is known. The potentialities of penicillin are still unknown. The following case report is written for the purpose of recording a case of Rocky Mountain spotted fever treated with penicillin.

Little A. L. C., a 2½ year old girl, was taken on May 17, 1944, with a fever, followed the next day by a macular rash, two weeks after a dog tick was found on her body. The rash was seen first behind the ears, next involving the limbs, and finally the body was covered with a generalized eruption. She was admitted to St. Luke's Hospital May 25, 1944, when her temperature was 103.4 degrees, pulse 130. There were no previous illnesses.

The physical examination revealed a well developed and nourished little girl, apathetic but obviously resenting handling as though her muscles were sore. The neck was not stiff, Kernig's sign was negative, lungs clear, heart and abdomen normal.

The rash was maculo-hemorrhagic in character, being generalized except for the face and most marked on the extremities.

The laboratory work was as follows: Red blood cells 4,010,000, hemoglobin 74 per cent, white blood cells 22,700 with 88 per cent polynuclear neutrophils, 11 per cent lymphocytes, and 1 per cent mononuclears. The urinalysis was not significant. The blood serum on admission agglutinated Proteus X-19, 1-200 dilution, and 1-800 six days later.

On May 26, the day after admission, penicillin, 5,000 Oxford units intramuscularly every three hours, was begun and continued day and night for five days for a total of 200,000 Oxford units. The temperature during all this time averaged 102 degrees and returned to normal with complete recovery June 5, nineteen days after the onset or eleven days after the beginning of penicillin treatment. Penicillin apparently had no effect on the course of the disease.

Colonel Turner Talks On Venereal Diseases.

At the panel discussion of venereal diseases, held by the New York Academy of Medicine, at New York City, October 12, Colonel Thomas B. Turner, MC, Director of the Civil Public Health Division, Preventive Medicine Service, presented a paper on the applicability of chemotherapy methods in the treatment of venereal diseases in military and civilian practice.

Citing the rapidly moving events in this field, Colonel Turner said they point more and more insistently to the practical usefulness of specialists in venereal diseases. In connection with syphilis he warned particularly against "treating the noninfectiousness" which he said had no meaning and de-

notes a dangerous doctrine since experience has shown that in early syphilis a patient is either cured or not, and if he isn't cured almost surely an infectious relapse will occur.

The venereal disease rate among soldiers stationed in this country is less than half the rate during World War I, said Colonel Turner, and one sixth the rate during the Civil War. This, he concluded, can only be interpreted as an accomplishment of American medicine, both military and civilian, and as treatment becomes more effective, more rapid and less dangerous, physicians should double their efforts to make these great advances available to all who need it.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE,
MEDICAL SOCIETY OF VIRGINIA

The patient was a thirty-one year old colored multipara with three previous pregnancies who was seen at home for the first time when seven months pregnant. She was having uterine contractions, for which she was given morphine and nembutal. There was no vaginal bleeding. The nembutal was taken at intervals for the next three days with relief of the abdominal pain. The cervix did not dilate during this time and the patient was sent to a hospital on the night of the third day, at which time she was said to be in strong labor.

After admission to the hospital with three days of labor the cervix was two fingers dilated. The cervix was then manually dilated and the child delivered by version and extraction. The cervix is said to have been torn and a fibroid the size of an orange was found in the cervix. The blood loss was excessive. The patient ran a septic course in the puerperium and there were episodes of profuse bleeding. She was seen by a consultant about one week postpartum at which time the temperature was 103 degrees to 104 degrees Fahrenheit. A hysterectomy was done. The patient was given three transfusions of whole blood and placed on sulfathiazole. The course continued downhill and she died on the ninth postpartum day. No autopsy was performed and there is no note of a pathological examination of the removed uterus.

COMMENT

This has been classified by the committee as a preventable obstetrical death because of the absence of prenatal care and the methods of treatment employed.

If this patient had an orange sized fibroid in the cervix it is strange that there is no note in the information available to us concerning this tumor at

the time of the hysterectomy nor a note concerning the pathological examination of the removed structures. This patient was only thirty-one years old and had had three previous pregnancies. It would be interesting to know the age of the youngest child as myomata are usually slow growing tumors. In any event, prenatal care with an adequate pelvic examination in the early months would have afforded an opportunity for detection of the tumor and arrangements could have been made for the proper method of delivery dependent upon the findings. An orange sized fibroid in the cervix usually indicates an abdominal delivery, because the tumor by virtue of its location in the cervix will most likely block the pelvis. If this were the case then with the onset of the premature labor, the child should have been delivered by Cesarean Section.

After admission to the hospital, because of the failure of the cervix to dilate, it was dilated manually from one or two finger dilatation and the child delivered by version and extraction. Manual dilatation of the cervix is a dangerous and deadly procedure, and should practically never be performed. The result is usually lacerations, hemorrhage, infection and death. There is practically no indication for this procedure in present-day Obstetrics. The course of the present patient after delivery is a common sequel to accouchement forcé. The therapy postpartum is probably not open to criticism, although if hysterectomy was necessary it probably should have been done in the first or second postpartum day. After admission to the hospital the patient should either have been left alone and treated symptomatically, or delivered by Cesarean Section if a fibroid blocked the pelvis or immediate delivery seemed essential (which is rarely the case in the absence of antepartum hemorrhage).

PUBLIC HEALTH

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for September, 1944, as compared with the same month in 1943, and for the period of January through September, 1944, compared with the same period in 1943, follows:

	Sept. 1944	Sept. 1943	Jan.- Sept. 1944	Jan.- Sept. 1943
Typhoid and Paratyphoid Fever	20	30	102	164
Diarrhea and Dysentery	1,206	802	5,250	4,697
Measles	23	73	17,032	9,392
Scarlet Fever	128	90	2,117	1,229
Diphtheria	40	34	192	237
Poliomyelitis	249	10	604	41
Meningitis	11	10	449	731
Undulant Fever	0	2	32	28
Rocky Mountain Spotted Fever	12	9	76	51
Tularemia	2	5	38	39

THE PHYSICIAN AND NUTRITION

It is generally recognized that a large part of the population will consider seriously the advice given by the family physician. The general practitioner increasingly is taking the opportunity to encourage patients to develop better health habits. Counsel in more intelligent eating habits is one phase of this professional effort that perhaps needs emphasis at this time.

While the physician naturally is engrossed with the diagnosis and treatment of disease, he is becoming more and more impressed with the value of applied dietary practices by his patients for the development and maintenance of general health. He is

realizing that mental depression, nervous instability, and other vague manifestations, to a degree at least, often are associated with malnutrition.

The success of the effort to combat nutrition problems depends upon the interest of numerous groups, including very definitely the medical profession. The family doctor realizes that giving patients vitamin capsules is not enough. Therefore, he is taking every opportunity to stress the importance of eating the foods which not only will give patients the vitamins, but the other thirty-odd elements known to be needed by the body.

Before 1912 the physician thought largely in terms of fats, carbohydrates, and proteins. Now the addition of ten amino acids, thirteen minerals, and at least seven vitamins makes the science of nutrition a bit more complex. But the practical application of nutrition facts is beginning to catch up with the science.

The benefits derived from better sanitation, prevention of epidemics, and other public health factors readily have been accepted by the medical profession as direct influences in lengthening the span of life. It is just as important to increase man's usefulness and decrease the burden of ill health by instructing him in a proper dietary regimen. And in this connection it is much more important for the public to have its interest increased and obtain the true facts as to normal and health-sustaining diets from the medical profession, rather than to get distorted advice from faddists and misinformed persons.

Immunization Virtually Eliminates Tetanus in Armed Forces.

Tetanus has been virtually eliminated from our armed forces as a result of compulsory immunization. Major General Norman T. Kirk, USA, Surgeon General of the Army says that not a single case has been reported among completely vaccinated troops and there has been only a handful of cases throughout the entire Army. These occurred prior to vaccination or before the immunization process had been completed. The Navy, which also requires tetanus immunization process, has had no cases of the disease among sailors or Marines wounded in

combat up to September 15, 1944, according to the Navy Bureau of Medicine and Surgery.

The most recent account illustrating the value of tetanus immunization was given in the report of a Navy medical officer who served aboard a hospital ship on which 284 Japanese and 384 Americans, all wounded in the same engagement, were being treated. Fourteen cases of tetanus, ten of which were fatal, occurred among the Japanese. None of the Americans developed the disease. Army medical records indicate that the Japanese do not immunize actively against tetanus.

BOOK ANNOUNCEMENTS

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us same.

Gynecological and Obstetrical Urology. By HOUTON S. EVERETT, A.B., A.M., M.D., Associate Professor of Gynecology, Johns Hopkins University, and Associate in Gynecology, University of Maryland; Assistant Visiting Gynecologist and Gynecologist in Charge of the Cystoscopic Clinic, the Johns Hopkins Hospital; etc. Baltimore, The Williams and Wilkins Company. 1944. xv-517 pages. Illustrated. Cloth. Price \$6.00.

Ventures in Science of a Country Surgeon. By ARTHUR E. HERTZLER, M.D., Halstead, Kansas. 1944. 304 pages. Illustrated. Cloth.

Technique in Trauma. Planned Timing in the Treatment of Wounds Including Burns. From the Montreal General Hospital and McGill University. By FRASER B. GURD, M.D., C.M., and F. DOUGLAS ACKMAN, M.D., C.M. In Collaboration with John W. Gerrie, M.D., C.M., Edward S. Mills, M.D., C.M., Joseph E. Pritchard, M.D., and Frederick Smith, M.D. Philadelphia, J. B. Lippincott Company. 1944. vii-69 pages. Illustrated. Cloth. Price \$2.00.

The importance of burns and other wounds in both military and civilian life has greatly increased during the past five years. Intensive study of the problems presented by such injuries has resulted.

In this monograph the authors describe a large number of wounds and burns treated in the Montreal General Hospital. The basic principles of immobilization and infrequent changing of occlusive pressure dressings advanced by Allen and Koch in 1942 are followed. To these principles are added planned timing of treatment, the use of Operational Charts, attention to the physiological requirements of the patient and team work.

By means of a carefully conducted clinical study the authors have emphasized the correctness of certain sound principles and have made a very definite contribution to clinical research in this important field of therapy.

FRANK P. COLEMAN,
Major, Medical Corps.

Minor Surgery. Edited by HUMPHRY ROLLESTON and ALAN MONCRIEFF. Philosophical Library, New York. 1944. viii-174 pages. Illustrated. Cloth. Price \$5.00.

The busy general practitioner is always in need of a quick and ready reference in managing everyday minor surgical problems. The eighteen contributors to this book offer help and guidance in many

instances where the practitioner must rely upon his own knowledge for the immediate proper care of the lesion in order to forestall serious later consequences.

It has been prepared primarily for the general practitioner; however, it is rather broad in scope in that some surgical problems described are in reality major surgical procedures and had best be treated by a senior surgeon. The repair of lacerated tendons and the ligation and injection of varicose veins under average circumstances are not managed by men doing general practice. The hopeless outlook for restoration of function of the hand after severance of the flexor tendons is not shared by many American surgeons. The contraindications to the injection treatment alone or in combination with ligation in the treatment of varicose veins are not emphasized.

The minor surgical procedures have few accompanying illustrations which would add much to the value of the book. The subject matter is brief, but it offers quick and valuable reference material.

FRANK P. COLEMAN,
Major, Medical Corps.

New Books.

The following are recent additions to the Library of the Medical College of Virginia, Richmond, and are available to our readers under usual library rules:

- Best and Taylor—The living body. Rev. ed. 1944.
- Bodmer—The loom of language.
- Bondar, D. comp.—Simplified Russian method, conversational and commercial.
- Brumley—A textbook of the diseases of the small domestic animals. 4th rev. 1943.
- Council on pharmacy and chemistry—Annual reprint of the reports of the Council on Pharmacy and Chemistry of the A.M.A. 1943.
- Crain, ed.—Teacher of business. 1944
- Dandy—Intracranial arterial aneurysms.
- Dodge—Diseases and pests of ornamental plants. 1943.
- Gunther—Practical malaria control.
- Handbook of Roentgen Diagnosis—The gastro-intestinal tract. 1944.
- Horney—Self-analysis. 1942.
- Knaysi—Elements of bacterial cytology.
- Kracke—Diseases of the blood and atlas of hematology. 2nd ed. 1941.
- Langenscheidts—Taschenwörterbuch (Pocket dictionary).
- Levy—Experimental chemotherapy of histoplasmosis in white mice (Thesis)
- Lewis—The executive's desk book.
- McCready—On the influence of trades, professions, and occupations in the U. S. in the production of disease.

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No. 11

The New President

YOUR new president, Henry Bearden Mulholland, was born in Knoxville, Tennessee, January 9, 1892. His early education was completed in the public schools of Knoxville, Tennessee and Washington, D. C. Family ties brought about a change of residence to Canada and premedical college preparation as well as first year medicine followed at the University of Toronto.

In 1917 Dr. Mulholland was placed in the Medical Reserve and assigned to the second year of medicine at the University of Virginia. Back in the south he prospered under the benign influence of a superior climate and at one time attained the position of night hospital orderly while still a third year medical student. The terrible influenza epidemic of this period required a double effort on the part of medical students and your president did his share of the extra work, his only reward at the time—a few midnight chocolate milk shakes in the hospital diet kitchens.

Graduation from the University of Virginia Medical School came in 1920 and for one year following this a rotating internship in the University of Virginia Hospital. This led to the Residency in Medicine at the same institution for the year 1921-1922. During this year, particularly, and in subsequent years, Dr. Mulholland fell under the helpful guidance of the late Dr. James Carroll Flippin (President Medical Society of Virginia, 1932-3), a profound student and teacher of the fundamentals of medical practice. Early in his career (1923) Dr. Mulholland spent a summer with Dr. Chester Morse Jones at the Massachusetts General Hospital in Boston. Several years later, he pursued further postgraduate work for a year abroad (1927-1928) with Prof. Erich Grafe in Wurzburg and Prof. August Krogh in Copenhagen and other clinics.

Finally settling at the University of Virginia Medical School, your new president has passed through a steady advance: Student Physician and Instructor in Medicine,

1922-1927, Assistant Prof. of Medicine, 1927-1928, Associate Prof. of Medicine, 1928-1938, Professor of Practice of Medicine, 1937-to date, Assistant Dean of University of Virginia Medical School, 1942-to date, Acting Head of Department of Internal Medicine 1943-to date.

"Hank", as he is known to his many friends, has the happy characteristic of liking people and having them like him, a trait naturally acquired from a delightful mother, Mrs. Mulholland, widow of John H. Mulholland. Dr. Mulholland was married to Miss Elizabeth Brown of Rock Hill, S. C., on October 19, 1925. There are two children,



HENRY BEARDEN MULHOLLAND, M.D.,
President, Medical Society of Virginia

Betty fifteen who keeps "Hank" abreast the latest news and Jackie, a young dynamo of twelve on whom your new president depends vicariously for exercise and a place in the world of sports. Jackie has recently won a boy's tennis tournament. However, "Hank" himself is not without skill in sports, particularly of the indoor variety, and rarely is he forced to the "shuck" house on a rainy Saturday night.

Dr. Mulholland will make a good president. His capacity for work is excellent. He understands the trend of present-day problems. He realizes that the Medical Society of Virginia must offer the people of Virginia a helpful and progressive program in a chaotic postwar period. His ability, training and experience insure the conception and execution of such a program. His many friends will support heartily his plans for better postgraduate medical education and better medical care for all.

J. EDWIN WOOD, JR.

Rubella and Pregnancy

NEWS comes from Australia that German measles is not the simple and innocuous disease it was formerly thought to be. In 1941 Gregg studied a series of 78 congenital cataracts. With few exceptions the mothers gave a history of an exanthematous disease diagnosed as rubella, occurring in the early stages of their pregnancy. In 44 of these cases a congenital heart lesion was also present. Gregg's report created so much interest in the State of South Australia that a committee consisting of an internist, a pediatrician, an ophthalmologist and an otologist, was appointed to study the question. Every child born with a malformation was investigated. Swan and others reported their findings in the *Medical Journal of Australia* for September, 1943. There were 31 mothers who gave birth to children with congenital defects. All save two had contracted German measles during the first trimester of pregnancy. Nine babies had a cardiac lesion; three were probably mentally deficient; one had club feet; seven were deaf. There were also cases of microcephaly and mental retardation. Fourteen of the 31 babies had ocular defects, one a buphthalmos, 10 bilateral cataracts, and 3 unilateral cataracts. The conclusions of the committee were that, if a woman contracts rubella in the first two months of pregnancy, her chances of giving birth to a defective baby are in the neighborhood of 100 per cent, while if she contracts rubella in the third month they are about 50 per cent. Even after the third month there is still a slight possibility of her bearing a defective child. Rones (*Medical Annals of the District of Columbia*, 13:285, 1944) finds some confirmatory evidence in Washington, of the association of rubella in early pregnancy with congenital cataract. He reports four cases of Washington ophthalmologists. One mother had morbilli and three rubella. In the two cases in which the exanthem occurred in the second month of pregnancy, the infants had cataracts, while in the two cases with the disturbance in the third month, congenital glaucoma was present.

War Brides

A BRIDE is the personification of radiant happiness. In ordinary times this bride-state rarely persists. It is said that love is blind and this is the foundation for the happiness of the bride. Probably it would be more correct to say that she lives in a dream-state or dwells in a Castle in Spain. Usually in the course of months there is an awakening, more or less. Certain imperfections and unlovely traits appear in the groom and the bride is no longer a bride. If the contracting parties are sensible, the groom comes down off his pedestal and seeks his proper level in society, and the bride gets used to being less than the most adorable creature in the world. If the contracting parties are not sensible they make for the divorce court.

The war bride has the advantage of knowing that she married a hero and very rarely is she mistaken. She follows her hero back and forth across the country, putting up cheerfully with the dangers and inconveniences of wartime travel and proceeds forthwith with woman's greatest occupation—the raising of a family. The surroundings are none too favorable. She has to live in trailers or cabins or makeshift homes. She does not have the guidance of family or old friends. She is in a new, crude world of youth and must miss the protection of home. Perhaps for that very reason she starts right away to make a home of her own. If she does not promptly become pregnant,

she seeks the reason why, and attempts to correct whatever that reason may be. If she does become pregnant she is happy.

It has been our privilege to know many of these women professionally. They have come from all parts of the country—the Pacific Coast, Idaho, Montana, Utah, Colorado, the Mid-West, New England and the South. Some were G. I.'s wives and some the Colonel's lady, but invariably they were brides, i.e., happy, and it was a pleasure to be in their company. What they must mean for the morale of the army and the navy is beyond estimation. They were conscious of and proud of the part they were playing. Unwittingly, they played a great role in prevention of venereal disease, that great menace of armies since the dawn of history.

When the hero was "shipped out", the heroine—for she is a great heroine—went back to mama, but not in the spirit that that phrase formerly connoted. We cannot know, of course, what their lot was when they went home to Massachusetts, Rhode Island, New York, Colorado, etc., but those who came home to Virginia brought their radiant happiness with them. Many of them got busy helping out with the labor shortage—nursing or working in an office. In addition to their happiness, these women gave one the impression that they had developed a definite mother complex for their soldier husbands.

All too frequently a sad message from the War Department arrived about the time the baby came. They took it with Roman fortitude—just a few badly concealed tears and an evident, but not expressed, determination to live up to their new responsibility.

There has been much speculation as to what will happen to the war brides whose husbands *do* come back, and the picture that has been painted is none too bright. What the future holds for them only a prophet can say. Be that as it may, something has made of them as noble a class of women as it has been our privilege to know; and that is saying a great deal. It is the only class of stay-at-homes that has the war spirit of self sacrifice, and that in itself is worth while. It will be an interesting study to see what becomes of them. Our own guess is that they will measure up to any situation, and that they will meet it with a smile on their lips.

Floral Eponym (21)

MUSA

MUSA, ANTONIO, FL. 1ST CENTURY, B. C.

The Musaceae are the largest of tree-like herbs. They are grown for their large, striking foliage, for fruit, and for fiber. *M. sapientum* Linn. is the common banana.

Antonio Musa was a pupil of Asclepiades and was the personal physician of Augustus, the first Emperor of Rome. He cured the Emperor of liver trouble by means of hydrotherapy. This feat seemed to have gone to his head, and he had his statue erected beside that of Aesculapius. He boasted of having invented a secret remedy with which he kept Caesar and Maecenas in good health. He prescribed excrement of dogs for angina, maintained that he was able to pulverize stones inside the bladder, and regarded the herb betony (*Stachys Betonica*, Benth.) as a sovereign remedy for all diseases. He numbered among his patients besides Augustus, Virgil, Horace, Maecenas and Marcus Agrippa.

Societies

The Augusta County Medical Association

Held its regular quarterly meeting at Staunton on August 2, at which time papers were read by Dr. George H. Kinser of Waynesboro on Disability Wage Plans Practiced by the du Pont Company, and by Dr. John H. Guss of Staunton on Gold Salts in the Treatment of Rheumatoid Arthritis. At the business session, the following were elected as officers for the coming year: President, Dr. J. Hansford Thomas of Greenville; vice-presidents, Drs. George H. Kinser of Waynesboro, C. W. Putney of Staunton, and G. E. Stone of Staunton; secretary, Dr. John H. Guss; treasurer, Dr. J. E. Womack; and censor, Dr. Glenn C. Campbell, all of Staunton.

Patrick Henry Medical Society.

On October 13, this Society held its regular quarterly meeting in Martinsville. A Diphtheria Prevention Program sponsored by the Charity League of Martinsville for the local schools was endorsed by the Society.

Election of officers for the ensuing year resulted as follows: President, Dr. E. N. Shockley, Bassett; vice-president, Dr. B. A. Hopkins, Stuart; and secretary-treasurer, Dr. T. H. Dickerson, Martinsville.

After the business meeting Dr. Fred E. Hamlin of Roanoke gave a very interesting discussion on "The Nose and Its Relation to the Practice of Medicine".

The Tazewell County Medical Society

Met in North Tazewell on September 28, with the President, Dr. J. W. Witten, presiding. The following officers were elected to serve for the next twelve months: President, Dr. C. G. Bennett, Bishop; vice-president, Dr. A. D. Parson, Richlands; and secretary-treasurer, Dr. J. A. Robinson, Richlands.

A highly instructive and interesting paper entitled "Pregnancy Complicated by Diabetes Mellitus" was presented by Dr. Mary Elizabeth Johnston of Tazewell.

Wise County Medical Society.

The first fall meeting of this Society was held at Norton on September 22, under the presidency of Dr. Glen Foster, Stonega. The members were guests of the Norton doctors at a dinner, following which the scientific program was presented. Dr. Bruce Powers, Knoxville, Tennessee, spoke on "The Treatment of Congestive Heart Failure". This was discussed by Drs. F. E. Handy, Appalachia, and R. L. Phipps, Clintwood. Dr. Richard Waterhouse, also of Knoxville, spoke on "The Management of Head Injuries", and Dr. G. B. Setzler, Pennington Gap, lead the discussion. There was then a general round-table discussion of interesting medical and surgical topics among the doctors.

The next meeting of the Society will be held in Coeburn. Dr. W. B. Barton, Stonega, is secretary-treasurer.

News

Medical Society of Virginia.

As we go to press, the Society has just ended a most successful meeting in Richmond, under the presidency of Dr. C. B. Bowyer of Stonega. There were 570 doctors registered in addition to a large number of medical students, ladies and exhibitors. At the closing session, Dr. H. B. Mulholland of the University of Virginia succeeded to the presidency. Other officers to serve with Dr. Mulholland are: President-elect, Dr. Julian L. Rawls of Norfolk, and

vice-presidents, Dr. Harvey B. Haag of Richmond, Dr. Philip S. Smith of Abingdon, and Dr. William R. Whitman of Roanoke. Councilors were elected for the even numbered districts as follows: 2nd, Dr. C. Lydon Harrell of Norfolk; 4th Dr. James L. Hamner of Mannboro; 6th, Dr. James R. Gorman of Lynchburg; and 8th, Dr. J. E. Knight of Warrenton. Dr. J. Morrison Hutcheson of Richmond was elected to succeed himself as delegate to the American Medical Association for a term of

two years with Dr. Carrington Williams as his alternate.

An invitation from the Roanoke Academy of Medicine was unanimously accepted to hold the 1945 meeting in Roanoke.

Medical College of Virginia Commencement.

The commencement exercises of the one hundred seventh session of the Medical College of Virginia were held on September 23. Honorable J. Melville Broughton, A.B., LL.D., Governor of North Carolina, delivered the commencement address. The Doctor of Science degree, the only honorary degree to be awarded by the College this year, was presented to Dr. John Shelton Horsley of St. Elizabeth's Hospital, Richmond.

There were 167 graduates, 77 being in medicine, 30 in dentistry, 6 in pharmacy, and 53 in nursing, and 1 receiving the Master of Science degree. The following are graduates in medicine with their hospital appointments:

MEDICAL COLLEGE OF VIRGINIA, Richmond—Drs. Jane Beery Adams, Harrisonburg; Raymond Atwell Adams, Redoak; Federico Diez-Rivas, Caguas, P. R.; Hubert Taylor Dougan, Malta, Ohio; Ger-shon Gerald Ediss, Norfolk; Cecil Glen Finney, Richmond; Claude Albee Frazier, Winona, W. Va.; Edgar Clyde Garber, Jr., Greensboro, N. C.; Frank Wilson Gearing, Jr., Woodstock; Harold Goodman, Richmond; Marguerite Elizabeth Kersey, Bluefield, W. Va.; William Ward Kersey, Jr., Bluefield, W. Va.; Wallace Byron Lilly, Beckley, W. Va.; Ray Atkinson Moore, Jr., Hampden-Sydney; William Philip Morrisette, Midlothian; Eugene Goodbred Peek, Jr., Ocala, Fla.; William Anderson Sadler, Mathews; Oscar Orton Smith, Jr., Independence; Harry Yandell Spence, Berkeley, Calif.; James Tidler, Clarksburg, W. Va.; and Robert Palmer Trice, Richmond.

JOHNSTON-WILLIS HOSPITAL, Richmond—Drs. William Branch Bishop, Kenbridge; Charles Dotson Houck, Lewisburg, W. Va.; and Ray Donald Minges, Greenville, N. C.

THE TUCKER HOSPITAL, Richmond—Dr. Harry George Edward Stoeckle, Jr., Sturgis, Mich.

STUART CIRCLE HOSPITAL, Richmond—Dr. John Barrett Walker, Jr., Burlington, N. C.

LEWIS-GALE HOSPITAL, Roanoke—Drs. James William Lambdin, Rocky Mount; and Evelyn Clark Wade, Huntington, W. Va.

DE PAUL HOSPITAL, Norfolk—Dr. Nelson Saunders Payne, Norfolk.

CHESAPEAKE AND OHIO HOSPITAL, Huntington, W. Va.—Drs. Joel Foster Carr, Princeton, W. Va.; Otis Wilson Corder, Jane Lew, W. Va.; and Robert Russell Dennison, Huntington, W. Va.

CHARLOTTE MEMORIAL HOSPITAL, Charlotte, N. C.—Dr. Herbert Winston Frostick, Richmond.

CITY MEMORIAL HOSPITAL, Winston-Salem, N. C.—Dr. Robert Glenn Holt, Lexington, N. C.

REX HOSPITAL, Raleigh, N. C.—Drs. Robert Henry Thrasher, Norfolk; and Charles Baynes Wilkerson, Jr., Raleigh, N. C.

DOCTORS HOSPITAL, Washington, D. C.—Dr. Earle McKenzie Bane, Charles Town, W. Va.

STATE OF WISCONSIN GENERAL HOSPITAL, Madison, Wis.—Drs. David Scott Berkman, Rochester, Minn.; and Merritt Woodhull Foster, Jr., Williamsburg.

NEW YORK CITY HOSPITAL, New York, N. Y.—Dr. Gustaf Walter Erickson, Jr., Springfield, Mass.

CONEY ISLAND HOSPITAL, Brooklyn, N. Y.—Dr. Marcus Nakdimen, Abingdon.

BETH ISRAEL HOSPITAL, New York, N. Y.—Dr. Richard Dick Turin, Brooklyn, N. Y.

CUMBERLAND HOSPITAL, New York, N. Y.—Dr. Abraham Perlman, New York, N. Y.

BOSTON CITY HOSPITAL, Boston, Mass.—Drs. Oscar Withers Clarke, Petersburg; and Martin Markowitz, Brooklyn, N. Y.

VIRGINIA MASON HOSPITAL, Seattle Wash.—Dr. Rufus Purdum Ellett, Jr., Roanoke.

ST. VINCENT'S HOSPITAL, Jacksonville, Fla.—Drs. Arthur Lawson Hardie, Jr., Danielstown; and Dr. John David Lindner, Ocala, Fla.

HOSPITAL FOR WOMEN OF MARYLAND, Baltimore—Drs. Joseph Frasia Jones, Jr., Richmond; and Jean Fennell Wine, Harrisonburg.

UNION MEMORIAL HOSPITAL, Baltimore, Md.—Dr. Samuel Woolston Lippincott, Jr., Baltimore.

KNOXVILLE GENERAL HOSPITAL, Knoxville, Tenn.—Dr. Herman Melvin Kunkle, Portsmouth.

BAYAMON CHARITY DISTRICT HOSPITAL, Bayamon, P. R.—Dr. Jenaro Gerardo Scarano-Scarano, Ponce, P. R.

SOUTHERN BAPTIST HOSPITAL, New Orleans, La.—Dr. Walter Richmond Wilkinson, Huntington, W. Va.

ROBERT PACKER HOSPITAL, Sayre, Pa.—Dr. Joseph Franklin Wilson, Richmond.

NAVAL INTERNSHIPS

UNITED STATES NAVAL HOSPITAL, NOB, Norfolk—Drs. Leon Harper Alexander, Petersburg; Norris Scribner Erb, Jones Mills, Ark.; and Gervas Storrs Taylor, Richmond.

NORFOLK NAVAL HOSPITAL, Portsmouth—Drs. Robert Frederick Bondurant, Roanoke; Gordon Fletcher Harrell, Norfolk; William Donald Moore, Cary N. C.; and Elmer Walter Rice, Jr., Richmond.

NAVAL HOSPITAL, National Naval Medical Center, Bethesda, Md.—Drs. Sydenham Benoni Alexander, Charlotte, N. C.; and Roy Turnage Parker, Pinetops, N. C.

UNITED STATES NAVAL HOSPITAL, San Diego, Calif.—Dr. James Allen Farley, Huntington, W. Va.

UNITED STATES NAVAL HOSPITAL, Mare Island, Calif.—Dr. John Milton Gouldin, III, Tappahannock.

UNITED STATES NAVAL HOSPITAL, Oakland, Calif.—Drs. Thomas Carroll Iden, Berryville; and William Sanford Terry, Chatham.

UNITED STATES NAVAL HOSPITAL, Key West, Fla.—Dr. Robert Gwynn Schultz, Richmond.

UNITED STATES NAVAL HOSPITAL, Philadelphia, Pa.—Dr. Hal Waugh Smith, Montgomery, W. Va.

UNITED STATES NAVAL HOSPITAL, St. Albans, N. Y.—Dr. Charles Edward Woodson, Jr., North Garden.

MARINE INTERNSHIPS

UNITED STATES MARINE HOSPITAL, Norfolk—Drs. Jack Stone Shaver, Woodstock; and Robert Craig Shelburne, Christiansburg.

UNITED STATES MARINE HOSPITAL, Baltimore, Md.—Drs. Marion Lee Rice, Jr., Richmond; and Christian Fogle Siewers, Winston-Salem, N. C.

UNITED STATES MARINE HOSPITAL, New Orleans, La.—Dr. Edward Nisbett Maxwell, Richmond.

Dr. Walter Augustus Eskridge, Marlinton, W. Va., was also a graduate in the Department of Medicine.

The Sixth War Loan Is Coming Up

And the help of every one is needed in putting it over. The European fighting will cost much, long after the fighting stops, and the war against Japan is just entering the "all-out" stage and will cost more. The same amount of freight to the Pacific area costs 25 per cent more, and it takes twice as

many ships to move the same amount. Long range B-29's cost \$600,000 each, or twice the cost of the biggest previous bomber. By investing in War Bonds, you hasten the day of unconditional surrender and help shorten casualty lists. Your money invested during the Sixth War Loan drive works for your boy and girl in service as well as for you. Buy liberally.

Southern Medical Association.

Just a reminder of dates for the meeting of the Association in St. Louis—November 13, 14, 15 and 16—with Dr. James A. Ryan of Covington, Ky., presiding. All meetings and exhibits will be held in the Municipal Auditorium, which is in easy walking distance of a number of hotels. A large attendance is expected.

The Southern Chapter, American College of Chest Physicians

Will have its annual meeting in St. Louis, at the time of the meeting of the Southern Medical Association, November 13-16. The DeSoto is to be hotel headquarters. An interesting program will be given, and several social affairs have been arranged. Dr. Paul H. Ringer of Asheville, N. C., is president, and Dr. Benjamin L. Brock of Waverly Hills, Ky., secretary-treasurer.

Dr. A. I. Dodson,

Richmond, read a paper on "The Management of Nephroptosis" before the International Post-Graduate Association of North America, in Chicago, on October 17. He also spoke before the North Central Section of the American Urological Association on the 19th, his subject being "Renal Pathology Resulting from Nephroptosis with a Report of Cases".

Dr. R. W. Quaintance,

Who practiced for sometime at Lundale, West Virginia, has returned to his former home at Slate Mills, Virginia.

Annual Post-Graduate Course at University of Virginia.

Elsewhere in this issue, is given program for the eleventh annual Post-Graduate Course in Diseases of the Eye, Ear, Nose and Throat, which will be held at the University of Virginia Hospital in Charlottesville, on Tuesday, Wednesday, Thursday and Friday, December 5, 6, 7 and 8. The fee for the course will be \$5.00 a day. Further information in

regard to this may be obtained from Dr. Fletcher D. Woodward, Box 98, Charlottesville, Va.

Married.

Dr. James Guy Price, Norfolk, and Miss Beatrice Hope Watkins, South Hill, September 10th. Dr. Price received his medical degree from the University of Virginia in March 1943 and is now at the University Hospital.

Dr. William Gordon Leary, Jr., of the December 1943 class of the University of Virginia, and Miss Margaret Conley of Cincinnati, September 21. Dr. Leary recently completed his internship at Cincinnati General Hospital and has reported for service with the United States Navy.

Lt. (jg) Richard Albert Bagby, Richmond, and Miss Frances Otwell, Cumming, Ga., October 5th. Lt. Bagby is a graduate of the Medical College of Virginia, class of December 1943.

Lt. John David Lindner, MC., Ocala, Fla., and Miss Billie Wyatt Morris, Roanoke, September 24th. Dr. Lindner is a graduate of the Medical College of Virginia, class of September 1944.

Lt. Walter Erickson, Jr., MC., Springfield, Mass., and Miss Martha Lake Adams, Norwalk, Conn., September 24th. Lt. Erickson is a member of the class of September 1944, Medical College of Virginia.

Lt. (jg) Thomas Carroll Iden, Berryville, and Miss Mae Oglesby Tench, Pulaski, September 26th. Lt. Iden is also a member of the September 1944 class of the Medical College of Virginia.

Dr. E. Claude Jamison

Has received an honorable discharge from the U. S. Army and has resumed his former practice in Rocky Mount. He was released because of the need for medical care in Franklin County.

Jefferson Medical College.

The one hundred twentieth annual commencement was held on September 22nd at which time the address was delivered by Franklin B. Snyder, LL.D., President of Northwestern University on "An Incident in the History of Fort Ticonderoga". The present graduating class of 135 members brings the total number of graduates up to 17,355.

The annual alumni dinner was held on the 21st at the Bellevue-Stratford Hotel, with four hundred and fifty alumni in attendance.

Dr. Paul E. Brady,

Class of '43, Medical College of Virginia, has completed his internship at the University Hospital, Columbus, Ohio, and is now resident in surgery at the Grant Hospital, that city.

Dr. J. Langdon Moss,

Class of December 1943, University of Virginia, has completed his internship at Emory University Hospital, Emory, Georgia, and has entered the Navy as Lieutenant (jg) USNR. He is stationed at the Naval Air Station Hospital in Jacksonville, Fla.

Dr. Brown Honored.

Dr. George W. Brown of Williamsburg has been honored by Webster University of Atlanta, Georgia, through its President, by having conferred upon him the honorary degree of Doctor of Laws. It was stated that this was done in recognition of his work as a medical doctor, psychiatrist, church official, organizer and humanitarian.

Dr. William C. Barr, Jr.,

Formerly of East Falls Church, has moved to Stuart, Florida, where he will practice for the duration under the War Emergency Relief Plan.

Dr. Oliver L. Jones

Is located for general practice in the Harvey Building, at West Palm Beach, Florida. He was formerly of Hopewell.

For Sale.

Located in Virginia, the following: One Fischer Portable X-Ray, Model H, No. 4125, 65 Kv., 10MA, shockproof, oil-immersed tube. Also, one floor model Peerless short wave, with complete electro-surgical outlets. Write D. B. Phelps, D.S.C., 602 W. Hastings, Vancouver, B. C., Canada. (*Adv.*)

For Sale.

One Luxor B. Alpine Lamp in good condition. Shenandoah Valley National Bank, Winchester, Virginia. Executor of Estate of J. E. Harris, deceased. (*Adv.*)

Fountain Pen Found.

Some one registering at Richmond meeting of State Society left a fountain pen at Registration desk. Will be returned to owner upon request to this journal, 1200 East Clay Street, Richmond, 19. (*Adv.*)



FOR CONSTIPATION DUE TO MEDICATION...

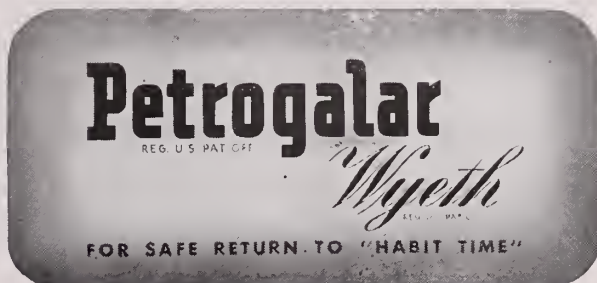


You know only too well that a number of useful, necessary medications may induce constipation as an unfortunate by-product. The normal cycle of bowel evacuations is thrown off schedule.

Petrogalar gently, persistently, *safely* helps to establish "habit time" for bowel movement. It is evenly disseminated throughout the bowel, effectively penetrating and softening hard, dry feces, resulting in comfortable elimination with no straining . . . no discomfort. Petrogalar to be used only as directed.

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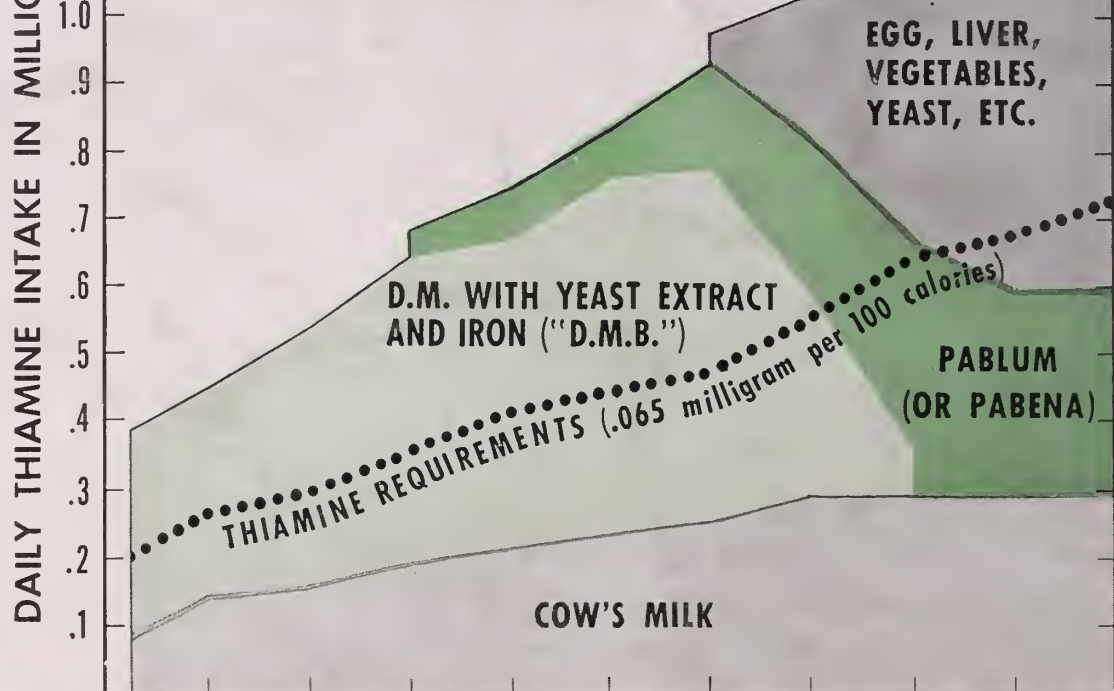
Petrogalar is an aqueous suspension of pure mineral oil each 100 cc. of which contains 65 cc. pure mineral oil suspended in an aqueous jelly. Five types afford a selection of medication adaptable to the individual patient. Supplied in 16-ounce bottles.



DAILY THIAMINE INTAKE IN MILLIGRAMS

THIAMINE

DURING THE FIRST TWO YEARS



AGE, Mos.	1/4	1	2	3	4	5	6	9	12	18	24
WEIGHT, Lbs.	7	9	10	12	14	15	16	19	22	23	25
MILK, Oz.	10	16	18	21	24	26	28	32	32	32	32
"D.M.B." Oz.	1	1	1 1/4	1 1/2	1 1/2	1 3/4	1 3/4	1	1/4	0	0
PABLUM, Oz.	0	0	0	1/8	1/4	1/4	1/2	3/4	1	1	1

THIAMINE DURING THE FIRST TWO YEARS

Thiamine functions as a component of a cellular respiratory enzyme system, and is necessary for the complete combustion of carbohydrate. Complete thiamine deficiency eventually results in beriberi, which happily is seldom seen in America. However, authorities agree that partial thiamine deficiency in this country is widespread.

In clinical practice, it is desirable to allow a liberal margin of safety over calculated requirements. The chart shows that this safety factor may be assured when the carbohydrate is "D.M.B." and the cereal is either Pabulum or Pabena.

MEAD JOHNSON & COMPANY, EVANSVILLE 21, INDIANA, U.S.A.

Virginia MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

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Christmas
Greetings

December 1944



PEACE ON EARTH

... TO MEN OF GOOD WILL

That all men everywhere may breathe again as free men ☆ ☆ That suffering and oppression may vanish forever from the earth ☆ ☆ That all men may regain their self-respect ☆ ☆ That the labor of all men may be devoted to the good of mankind ☆ ☆ That the pain and the hurt of all men be mercifully healed ☆ ☆ That all may live in peace forever!

We, men and women of Wyeth... as one voice, make this wish. To the doctors and nurses in our Army and Navy in the far corners of the earth; to our doctors and nurses at home; to our druggists; we at Wyeth are proud to have been of service. Proud and honored to have received our third Army-Navy "E". To you, men and women of mercy—our hand and our utmost support at all times.



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Guest Editorial

Chinese Medicine

WE are only beginning to understand a little the wise and very old civilization of China which for centuries has outlasted the assaults of outer barbarians, and once more is sore beset. Until comparatively modern times, China has been separated from the rest of the world by natural barriers as well as by her way of life; by the highest mountains and the broadest oceans and the most impassable deserts on our globe. Unlike the other ancient civilizations of Egypt and Babylon and Persia, she has survived wars and internal dissensions; and within the walls of their Flowery Kingdom the Chinese have preserved a culture old when the pyramids were young.

Now that their history is mingled with ours and they march beside us, it is interesting to compare some of the records of a theory and a practice of medicine that began in China more than 4,000 years ago, and is much older than the Greek and Arabian schools which have been the basis of western thought and teaching. When Hippocrates, father of modern medicine, was devising his famous oath, Chinese practitioners were already long familiar with diagnosis of disease by feeling the pulse, a method in which they excelled to an uncanny degree. As long ago as the fifth century B. C., Pien Ch'iao is said to have been able to tell all about "the obstructions of the five viscera" merely by the pulse, and his ten volume work, *The Pulse Classic*, is considered one of the standard works on medicine today.

Modern medicine is intrigued to find also that ancient Chinese physicians had a knowledge of drugs and of treatments recently "discovered" anew by the western world. More than four thousand years ago the legendary emperor, Shen Nung, is said to have introduced ephedrine (Ma Huang) to his oriental empire, and he apparently knew a great deal about the properties of the drug, although it has been a rather recent addition to modern pharmacopoeia.

This same Shen Nung (2838-2698 B.C.) is credited with an amount of research that would put a modern laboratory scientist to shame. According to the story, he tasted every day a hundred herbs, thus laying the foundations of the pharmacopoeia that is still China's proud possession. To assist him in this proceeding, it is said he was born with a transparent stomach which enabled him to watch the action of a large number of herbs, and the processes of digestion. He is venerated as the Father of Medicine, by whatever means he achieved his recorded results, and most Chinese cities have erected temples of medicine in Shen Nung's honor.

The Chinese have pioneered in the establishment of medical libraries of unique and only partially explored interest. Their records of practical procedures of value in both diagnosis and treatment already foreshadow many modern western methods. Not only their procedures, but their conception of medicine as a science concerned with bringing a man's whole being, his spiritual as well as his bodily self, into adjustment with his environment, is so old it is new again. Chinese medicine teaches that life is one throughout the universe, and that man's spirit must develop in harmony with the cosmos, if his quest for health is to be achieved.

An ancient proverb of the Flowery Kingdom sums up a conception as modern as tomorrow: "The superior doctor serves the nation; the middle grade doctor, the individual; the inferior doctor treats physical ailments."

DOROTHY ROBERTSON.

Floral Eponym (22)

MUSA LIVINGSTONIA, J. KIRK

DAVID LIVINGSTONE, 1813-1873

The great Scotch medical missionary who literally put Central Africa on the map, was born in Lanarkshire. He entered the neighboring cotton mill at ten years of age. At 25 he entered Anderson's College, Glasgow. The same year he was accepted by the London Missionary Society as a candidate. Two years later he took his medical degree in the Faculty of the Physicians and Surgeons in Glasgow. He had set his heart upon going to China and it was a great disappointment to him that the Missionary Society decided to send him to Africa. However, he went to Africa and remained there, with the exception of a few short visits to England, until he died at the age of 60. Livingstone was a geographer of the first water. He traveled about Central Africa leisurely and recorded all that was worthy of note with rare geographical instinct and the eye of a trained observer. He lived with the people, eating their food, studying their ways and sympathizing with their joys and sorrows. He was the first to comprehend the river systems of the continent and was the discoverer of the great Victoria Falls.

Musa Livingstoniana, J. Kirk, is a decorative plant ten to twelve feet high that grows in S. E. Tropical Africa up to an altitude of 7,000 feet. S. F. Blake, Senior Botanist of the U. S. Department of Agriculture, writes as follows: "The original description of Musa Livingstoniana does not state for whom the species was named, and there is no mention in the 'Flora of Tropical Africa' that Livingstone collected it. However, from the fact that it comes from Central Africa, I believe there is no question that Kirk named it for the celebrated David Livingstone."

BURNS: REVIEW OF CASES TREATED IN OVERSEAS ARMY GENERAL HOSPITAL

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Briefly, the fundamentals in the treatment of burns are (a) the prevention and control of shock, (b) the relief of pain, (c) the prevention and control of infection, and (d) the prevention of contracture and excessive scarring by proper splinting and early skin grafting. The local surface treatment should be limited to a minimum amount of debridement and cleansing and, finally the burned area should be covered with sterile petrolatum or, if this is not available, with boric acid ointment. A firm pressure dressing should be applied over this, which should not be changed for ten to fourteen days unless complications arise. It is our opinion that this treatment, as outlined above from a recent circular letter of the Surgeon General's Office, has proven most practical under war conditions and is one that can hardly be improved in civil practice. Cope,¹ in his review of the experience at the Massachusetts General Hospital with the victims of the Coconut Grove disaster, has pointed out the many advantages, medical and administrative, of the simple surface treatment, commonly referred to as the Koch-Allen Method.² The simplicity of the method frees the medical personnel for the administration of therapy directed against shock, and also compensates for the disproportion often existing between the number of casualties and the number of medical personnel available. Another advantage from the administrative standpoint, he has pointed out, is the availability of the supplies necessary and the fact that they are useful in the treatment of other injuries. The great advantages from the medical standpoint are that the burn is protected early and the chances of further contamination prevented, and, finally, that there is less manipulation to precipitate or aggravate shock.

Details of the care of patients with granulating wounds resulting from third degree burns present many problems for discussion and, with this in mind, we have reviewed the cases treated during a

six months' period in an Army General Hospital assigned to overseas duty. Of hospital admissions during this period, 78 were patients with burns. The group is small but the patients had passed through numerous medical installations and, because of the resulting screening, represents more or less the dregs of the barrel. It presents, therefore, many interesting problems in the prevention of scar tissue formation and contractures. Only six patients in the group were primarily treated by us for their burns. There was one death, a British Flying Officer with between 30 and 35 per cent of his body surface deeply charred as the result of a plane crash. He was given a total of 23 units of plasma, 12 of it during the first 24 hours and 3500 cc. of citrated blood beginning on the third day to combat a severe anemia that developed at that time. He was progressing satisfactorily when, on the seventh day, he had a reaction, manifested by a severe chill and hyperpyrexia following a plasma infusion and died a short time later. At postmortem the only finding of note, besides the burns, was diffuse parenchymatous damage to the liver, both gross and microscopic. Clinically, the death was due to a foreign protein reaction but, pathologically, it must be classed as due to liver toxemia. Two of the other freshly burned cases treated by us required grafting. One was returned to duty, while the other who had to be grafted on the posterior aspect of the right leg from the ankle to the junction of the middle and upper thirds of the thigh was returned to the Zone of the Interior. The remaining patients were returned to duty.

Forty-two or 54 per cent of the entire group of patients were grafted, a total of 63 operations being done since a number of cases required more than one operation. In the 72 burns not primarily treated by us, an average of 23.8 days had elapsed between the time of the burn and admission to our hospital. Thirteen patients had been burned 40 days or more, the longest time elapsing being 119 days. Grafting had not been done previously in any of these cases. Many patients had been in three or four hospitals

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because the military situation required rapid evacuation in order to make hospital beds available closer to the combat area. They had been, therefore, in some instances exposed to frequent unnecessary dressings for the purpose of inspection and had not remained long enough in any one place to be prepared for grafting. As a result, many were received with considerable secondary infection, and additional time was required to clear this up before grafting could prevent further scar tissue formation and contractures.

We were very much interested in how our patients were burned, particularly from the standpoint of the prevention of future burns, since so many of them were accidental. Only 16 of the 78 patients were battle casualties, most of them having been burned by fires started on landing craft by bombs during the invasion of Sicily. A majority of the other soldiers were burned as a result of negligence on the part of the individual or they were the innocent bystander victims of someone else's carelessness. In 11 instances the burns resulted from exploding field ranges and in four the result of automobile or airplane accidents. Forty-one or 53 per cent were burned by gasoline in a manner that was probably preventable or unnecessary. Gasoline became ignited while being used to clean clothes or to clean the motors of vehicles, when poured into hot cans, while being used to heat C-rations or hot water for washing purposes, when placed too near a fire or when poured on a fire, when a fire was approached with clothes soaked in gasoline and by a lighted match in the presence of gasoline fumes or a lighted match tossed into a container of gasoline. The other six were burned by various means, a signal flare ignited by an acetylene torch, an ethyl chloride tube broken accidentally close to a fire, an exploding blow torch, an accidental mine explosion and by hot water.

The preparation of third degree burned areas for grafting was often a real problem when much secondary infection was present. Normal saline wet dressings with fine mesh gauze next to the granulating wounds were applied on admission in nearly all cases since an average time of 30 days had elapsed in those patients on whom grafting was necessary when they were received by us. Bacteriological studies were not routinely done and so we have no figures on the number infected but it was felt clinically that a majority were, to some degree. Slough was removed as rapidly as possible and by

sharp dissection if necessary. The skin around the wounds became macerated from the moisture and since it has been felt by some observers¹ that the dead debris probably acted as a culture medium, this was cleaned away with neutral soap and water each time the dressing was changed, if it was thought necessary. All patients were given a high protein diet, multivitamins and iron. We did not consider a patient ready for skin grafting unless the plasma proteins were above 6.5 gm. per cent and the red blood cell count was 4,000,000 or above. Because the blood picture did not meet this standard, 15 of the 39 patients grafted received blood or blood and plasma to bring their readings above the minimal levels.

Choice of anesthetic is open to some discussion. Evans³ has stressed the advantages of using novocain locally. We, in general, subscribe to the use of local anesthesia, if at all feasible, in acutely ill patients and in other surgical conditions in the absence of infection in the area to be infiltrated provided the operation can be satisfactorily carried out and the patient not exposed to too much discomfort or mental anxiety. Burns must be considered infected wounds, and since anesthesia is required about the granulating wound when split grafts are used as well as the donor site, we feel that local anesthesia is usually impractical on the basis of injecting novocain into at least potentially infected tissue and also from a technical standpoint in extensive burns. Fifty-two of the 63 operations were in areas anatomically suitable for the use of spinal anesthesia. It was used as the primary anesthetic agent in 34 or approximately 65 per cent of the operations. In three patients with extensive wounds involving almost an entire lower extremity, operating time was prolonged to three or four hours, much beyond the effectiveness of the spinal anesthesia but, with the use of additional morphine, followed later by pentothal sodium, intravenously, the operations were completed. The removal of all the grafts was done first while the anesthetic was effective and the suturing of the grafts to the recipient area was done as sensation was regained. Local anesthesia was used in 13 operations in which spinal might have been used but they were all small split or pinch grafts. Pentothal sodium intravenously was used as the only agent in two operations and nitrous oxide and ether in three.

Our preparation of donor and recipient areas for operation has been very simple. The donor area is

shaved and washed with neutral soap and water the morning of the operation. In the operating room it is again washed with soap and water for at least five minutes and finally cleaned off with ether. The epithelial edges of the recipient area are thoroughly cleaned with soap and water the previous day and nothing further is done in the operating room. It has been our practice to cut all grafts before entering the field of the granulating wound in order not to change gloves and gowns, but we will next discuss the granulating wound before taking up the removal of grafts. If only four or six weeks has elapsed since the patient was burned, the granulations are usually firm and healthy with a minimal amount of scar tissue formation and the grafts may be applied directly to them. However, if the time of grafting has been delayed, the granulations pile up, become unhealthy and a great deal of scar tissue is formed. Such granulations should always be cut away with a knife. In some small wounds we have excised the entire thing down to a normal base.

We feel, as nearly everyone else does, that split grafts are the best type from the standpoint of preventing further scar tissue and for furnishing a durable skin surface. They were used in 54 of our 63 operations. Pinch grafts were used in the other nine, in each instance the area grafted being small. In a few of the extensive wounds in which it was difficult to cut enough split grafts pinch grafts were used to fill in gaps. A majority of our split grafts have been cut with the Padgett dermatome. We realize that they can be cut free hand just as well and possibly faster by many surgeons. It is our feeling that every surgeon should be able to use the knife free hand because the dermatome may not always be available. The only advantage to the dermatome is that skin of uniform thickness is obtained, although the attachment for the Blair-Brown knife enables one to cut skin of predetermined and constant thickness. For success in using the dermatome the glue must be of the right consistency, neither too thick nor too thin; it must be allowed to dry on the drum and skin before contact is made between the two, and, finally, a sharp knife is most essential. You may cut grafts free hand after a fashion with a slightly dull blade but with the dermatome such a knife will pull the skin away from the drum before it is cut. When grafts are removed from the thighs with the dermatome they are removed in a circular fashion around the extremity

as better contact is made across the entire surface of the drum in this direction. The drum is rotated so that the skin is elevated just ahead of the knife as cutting progresses.

Grafts have been sutured in place with a slight overlap at the edges with a continuous suture of fine silk. We have not found it necessary to suture the grafts except at the edges in most instances since many of them were on the extremities, and by suturing the grafts under slight tension good approximation was made to the entire bed. In addition, the pressure dressing which is easily applied to an extremity assures approximation. Sutures taken in the middle of grafts may result in bleeding which separates the graft from the bed unless washed out and controlled. Small stab wound cuts have been made in all the large grafts to allow blood and serum to escape.

Fine mesh gauze impregnated with an ointment composed of 5 per cent iodoform, 40 per cent lanolin, and 45 per cent vaseline has been placed next to the grafts since neither scarlet red nor xeroform were available. Sterile gauze and mechanics' waste is next applied and, finally, an ace bandage for pressure. The ace bandages have been applied from the toes up over the burned area in the case of the lower extremities in order to prevent thrombophlebitis because of retarded venous flow. Only one patient has developed thrombophlebitis and in that instance the pressure dressing by mistake was restricted to the grafted wound at the knee. In the case of all extremities a posterior plaster splint is applied for immobility to complete the dressing. Multivitamins and iron have been continued after operation, and transfusions of whole blood have been given when necessary.

In our own group we have argued the question back and forth as to the proper time to do the first dressing. It is our feeling that fresh burns and granulating wounds should be dressed as infrequently as possible in order to prevent the introduction of infection and, also, so as not to retard or injure growing epithelium. In our first cases we followed this principle closely and did not change any of the dressing for ten days unless elevation of temperature required an earlier change. On several occasions we found a great collection of purulent material under the dressing and many times infection about the sutures at the end of this time. This was particularly true with extensive granulating

wounds which we had not been able to completely cover at the first operation. This brought home to us strongly the necessity of covering the entire granulating wound with grafts even though it was necessary to prolong the operating time to three and four hours. We decided, therefore, to do the first dressings in five or six days and were delighted to find a great improvement in the percentage of take of our grafts, without any injury to them as far as we could tell. The grafts were firmly attached to the wound bed at this time so that it was impossible to separate them when the dressing was carefully done. Sutures were removed at this time and the danger of stitch infection eliminated. Since by this time we were grafting the entire wound, the objection to early dressings on the basis of damaging growing epithelium was eliminated. A vaseline gauze pressure dressing with splint was reapplied the first time. The dressings were not again disturbed for from two to five days. If there was any evidence of infection at subsequent dressings, a saline dressing was applied.

It is not possible to give any accurate figures on percentage of take of grafts, or, it might be more proper to say, on the percentage of the original granulating wound covered with epithelium at the end of ten days. Our reason for saying this is that grafts were frequently placed over areas that contained some epithelial islands and, when the first dressing was done, demarcated areas of the graft were found necrotic, which, when cut away, revealed complete epithelialization beneath. It is a curious but fortunate fact that in the case of extensive burns in which almost an entire extremity had to be grafted the percentage of take was from 95 to 100 per cent. Our poor results were in the cases with relatively small granulating wounds which had been neglected because they were small, with the hope that they would heal over without the necessity of grafting. As a result, considerable scar tissue formed in the bed which often did not prove to be a fertile field. This should bring home to us the necessity of covering the smallest of granulating wounds with epithelium either by secondary nature or by skin grafting.

Realizing the importance of physiotherapy, this was started as soon as the grafted area was well healed, which was usually from two to three weeks after the operation.

There were a few complications directly associ-

ated with the burns. We had three cases with contractures of fingers, two with flexion contractures of the knees, one with thrombophlebitis, previously mentioned, and two with multiple furuncles in healing second degree burned areas. The patients with contracted fingers had been burned 30, 40, and 64 days when we received them. Only two of them required grafting. We feel that hands and fingers should be splinted for as short a period of time as possible following the acute burn and all granulating areas should be grafted promptly. If grafting is delayed, passive exercises should be instituted in the interim. In some cases we delayed grafting several days because the fingers were stiff when we received the patient and we felt that it was wise to employ physiotherapy for a short time since it would be necessary to immobilize them for some time after grafting. The two cases with contracted knees had their contractures when admitted, never having been splinted, unfortunately. Joints other than the hands and fingers should be splinted from the first and maintained that way until all granulating wounds have healed. The patient with thrombophlebitis cleared up rapidly following two injections of the lumbar sympathetic trunk with novocain and hospitalization was not prolonged because of it. The multiple furuncles in the healing second degree burns responded to routine treatment.

This group of burns does not represent a true cross-section of such patients and besides is a small group, but we do think that the final disposition is of interest because, as we mentioned before, many of these patients were headed in our direction as cases who would probably require evacuation to the Zone of the Interior. In the group of 78 patients, 23 or 29 per cent were returned to full duty and 16 or 21 per cent to limited duty, making a total of 39 or exactly 50 per cent saved for some kind of duty overseas. Two of the patients were placed on limited duty because of other conditions than their burns; one had had a simple fracture of the tibia and fibula and the other had otitis media. Thirty-four, or 42 per cent of the patients were returned to the Zone of the Interior because of their burns or complications. Ten of this group were recently burned; some of these might eventually have been returned to duty, but were evacuated for military reasons. Even though a great number of patients had to be returned to the Zone of the Interior, we feel that a great deal was gained in preventing scar tissues

and contractures by grafting them overseas. Only one patient succumbed as a result of his burns.

SUMMARY

1. A group of 78 burned patients treated during a six months' period in a U. S. Army General Hospital assigned to overseas is reviewed.

2. The number of cases is small but the group is of interest because grafting was necessary in 54 per cent and the many problems encountered in the pre-

vention of scar tissue formation and contractures is discussed.

3. Final disposition of the patients is analyzed.

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Infantile Paralysis Epidemic.

The 1944 epidemic of infantile paralysis has officially become the second worst in the recorded history of the disease in the United States, according to announcement by Basil O'Connor, president of The National Foundation for Infantile Paralysis.

In the first 41 weeks of 1944, or up until October 14, there were 16,133 cases of poliomyelitis, according to the latest report from the U. S. Public Health Service. The all-time record was in 1916 when there were 27,621 cases.

Mr. O'Connor states that although the peak of the outbreak has passed, the epidemic itself has not yet ended, and this great outbreak has tested not only the resources of the National Foundation and its Chapters, but also those of the nation. The greatest problems were in obtaining sufficient doctors, physical therapists and professional personnel to cope with nearly simultaneous outbreaks in widely separated sections of the south, the east and the middle west. The seven states most severely menaced were New York, North Carolina, Pennsylvania, New Jersey, Virginia, Ohio and Kentucky, but emergency aid in the form of money, professional personnel and supplies has been sent this year by the National Foundation to 21 states and the District of Columbia.

It is further stated that the Foundation and its Chapters have trained many physical therapists in the modern principles of treating infantile paralysis, but many more technicians are still needed for this present fight. Through its scholarships in accredited schools of physical therapy the Foundation has

been and still is seeking to enlarge this first line of defense. These scholarships are available to graduate nurses, graduates in physical education or those with a minimum of two years undergraduate college work with science courses. Such applications may be made through the National Foundation or to The American Physiotherapy Association, 1790 Broadway, New York 19, N. Y.

Red Cross Ships Penicillin by Air for Prisoners of War in Germany.

On the basis of recommendations by medical officers recently repatriated from German prison camps and hospitals, the American Red Cross announces that it has sent 5,000 tubes of penicillin by air express to the International Red Cross Committee in Geneva to be used for American prisoners of war held by Germany.

The Red Cross plans additional shipments of medicines and medical supplies for prisoners of war in the light of the repatriates' reports. The International Committee has been asked to keep the prison camp leaders informed of the medicines available in the stocks held in Geneva for their use, and to suggest that the leaders not allow camp stocks to become depleted before reordering.

Regular shipments of Red Cross first aid kits intended for use when doctors are not available have been made to the prison camps in Germany. Bulk shipments of medicines and medical supplies also have been made to supplement those provided by German military authorities for the care of sick and wounded prisoners of war.

PERINEPHRIC ABSCESS*

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In these days of sweeping advances in medicine and surgery, one might well ask, "Why speak about perinephric abscess?" The answer lies in the fact that perinephric abscess is still of especial interest because of difficulty of diagnosis, and its high morbidity and mortality, which are largely dependent on the difficulty of diagnosis. Although the condition was well known to Hippocrates, and was described by him, even today the diagnosis is frequently not made until late in the course of the disease when the patient has become seriously debilitated, and from having been a good surgical risk has become a poor one. Just a few years ago, Higgins made the statement that in perinephric abscess the diagnosis was not made until autopsy in 32 per cent of the cases. Certainly such a condition warrants consideration.

A knowledge of the anatomy of the perinephrium is of help in understanding the pathogenesis of

tissue which is almost avascular, and varies in thickness. It is thickest over the posterior aspect of the kidney near the lower pole. This fat is absent at birth and scant until puberty. This layer of fat, and the kidney, are inclosed in another capsule. This capsule is formed by the fascia of Garota, which is continuous with the subperitoneal fascia, splitting into anterior and posterior layers to envelope the kidney and its surrounding fat. These layers fuse just lateral to the outer border of the kidney, while medially they are continued over the vessels. They are fused above the kidney also, but below they remain separate for a short distance. Perinephric abscess occurs in the layer of fat between the true capsule of the kidney and the capsule derived from the fascia of Garota. The abscess may perforate this outer capsule in any direction. It may perforate proximally into the subphrenic region.

There is one plexus of lymphatic vessels in the kidney parenchyma, one just below the true capsule, and one in the perinephric fat—all of which communicate.

Many classifications of perinephric abscess have been made, but that of Fowler and Dorman is as good as any. It is simple and works satisfactorily in considering the various aspects of the disease. They divide perinephric abscesses into three classes:

First, those cases of metastatic origin from a remote focus of infection.

Second, those having origin in destructive lesions of the kidney, such as renal calculus, pyelonephritis and pyonephrosis.

Third, those of rarer incidence caused by direct extension of disease from neighboring organs, such as tuberculosis of the spine, actinomycosis of lung and spine, amoebic abscess of liver, appendiceal abscess, and ruptured diverticulum of colon.

The first group comprises approximately 45 per cent of all cases, the second group approximately 45 per cent, and the third group approximately 10 per cent.

Some writers have believed that the perinephric fat is infected directly by a metastasis from a dis-



Positive Mathe's Sign. The shadow of the kidney and ureter on the side of the abscess remains sharp on respiration, while that on the left is blurred.

abscess in this region. The kidney is completely covered by a thin fibrous capsule, the true capsule. This structure is loosely attached to the parenchyma, and differs from the capsules of the other organs in that it can be separated rather easily from the parenchyma without injuring it. The kidney and its true capsule are embedded in a layer of fatty

*Read at the regular meeting of the Roanoke Academy of Medicine on February 7, 1944.

tant focus. Other writers have held that these metastatic perinephric abscesses are always preceded by a small cortical abscess in the kidney, which ruptures into the perinephric space. This latter view is fairly generally accepted now.

Perinephric abscess is not a particularly rare disease, making up approximately 0.25 per cent of surgical cases. It is, however, very uncommon in infants and children—most probably because they have scant perinephric fat. The majority of the cases occur between 25 and 35.

In regard to sex, the cases of metastatic origin occur more frequently in males—in the ratio of $2\frac{1}{2}$ to 1. In the other two groups the ratio is reversed.

The cases of metastatic origin occur on the right side about twice as frequently as on the left. In the other two groups the sides are involved about an equal number of times. Bilateral metastatic abscesses have been reported.

The bacteria involved vary according to the type of abscess. In the cases that are metastatic, usually one organism is found in pure culture, and that organism is usually the staphylococcus aureus, although sometimes the staphylococcus albus or the streptococcus is the causative agent.

In the second group, those associated with destructive lesions of the kidney, there is often a mixed infection. *Bacillus coli* is the most frequent offender.

In the third group of cases, those due to extension of the infection from neighboring organs, the organism present is naturally that of the primary infections in the adjacent organs. Here, too, the *Bacillus coli* is the most common offender. The tubercle bacillus, the staphylococcus, and the streptococcus are also frequently present.

The diagnosis is based upon the correlation of the history, physical findings, laboratory data and x-ray studies. There may be a history of previous superficial infection, such as a boil or carbuncle, or a respiratory infection which apparently was not of serious moment. There may also be a history of trauma. Brewer was unable to produce perinephric abscess in laboratory animals by intravenous injection of staphylococci until he traumatized the perinephric fat. The onset is insidious. At first there may be no specific complaints, only fatigability, fever and malaise. As the process goes

on the patient develops pain and tenderness and sometimes chills and looks the picture of infection. The pain is never colicky but does vary in intensity, being aggravated by movements of the trunk, deep breathing and coughing. The pain is usually located in the costo-ileal region, but sometimes is in the upper abdomen, the shoulder, or the thigh. Occasionally the patient will flex his thigh for relief. Tenderness in the costo-ileal region is practically always present. Sometimes a swelling or palpable mass is present. Late in the disease fluctuation may appear.

The fever is apt to be high, sometimes going to 106° . Early in the disease the fever chart is apt to show wider excursions than later; and chills are more apt to occur early in the course of the disease. The pulse rate is elevated to a corresponding degree.

The white cell count is elevated, usually between 14,000 and 19,000, but has been reported as high as 84,000. The percentage of polymorphonuclear leukocytes is proportionately increased. Hypochromic anemia is present, its severity corresponding in a rough way to the duration of the disease.

The urinary findings vary and depend largely upon the type of abscess. Abnormalities are least frequent in the metastatic type. Albumen, red blood cells, and leukocytes may be present. Bacteria may be found in the urine occasionally.

X-ray studies often yield important information; but none of the accepted signs of perinephric abscess is absolutely pathognomonic. The accepted signs are shadow of collection of pus, obliteration of the psoas' margin on the side of the abscess, elevation of the diaphragm, distortion of the calyces, rotation of the kidney on either the horizontal or vertical axis, displacement of the kidney and upper ureter, curvature of the spine with concavity on the side of the abscess, displacement of the colon, and fixation of the kidney. This last sign is probably the most reliable and is known as Mathe's sign. It is best elicited by making an intravenous urogram with the patient first holding his breath and then with him breathing. The kidney shadow will be blurred on the normal side when the patient breathes, while on the side of the abscess the shadow will remain sharp.

It must be remembered that frequently abscesses have been found which failed to show pre-operatively the cardinal signs and symptoms, and that

frequently abscesses have not been found when pre-operatively the symptoms of such were present and demanded exploration.

Conditions which must be differentiated from perinephric abscess include traumatic rupture of the kidney, pyonephrosis, nephrolithiasis, renal and perirenal tumors, lumbar arthritis, lumbar hernias in Petit's triangle, retrocecal appendicitis, appendiceal abscess, subdiaphragmatic abscess, gall-bladder disease, tuberculosis of the spine and hip, and typhoid fever. Osteomyelitis of a rib, perforation of carcinoma of colon, and rupture of aneurysm of abdominal aorta have been diagnosed perinephric abscess.

Once the diagnosis is made, the abscess should be incised and drained. Aspiration is mentioned only to be condemned. Careful judgment must be exercised in the question of extent of exploration. It is best to do no more than establish adequate drainage. A second operation for drainage of the kidney or for nephrectomy is to be preferred to a dangerous over-zealous exploration at the first operation.

The post-operative course is apt to be long and the operative mortality high. In patients without renal involvement the hospital stay averages about 24 days and in those with gross involvement of the kidney, 69 days. The average mortality ranges from 6 per cent to 34.6 per cent according to different writers. Most of the fatalities occur in those cases associated with chronic disease of the kidneys and in those due to extension from neighboring organs.

CASE REPORT

This white soldier, age 33, was admitted to Woodrow Wilson General Hospital on the 25th of July, 1943, complaining of chilly feeling, fever, aching eyeballs, muscles and joints. Family history and past history were unimportant. A diagnosis of nasopharyngitis was made and he was put on sulfadiazine July 27, 1943. His temperature returned to normal July 30, and the next day the sulfadiazine was discontinued. During the course of this nasopharyngitis he developed slight pain in the right side on deep breathing. The pain persisted. Shortly he began to run a little elevation of temperature. The temperature gradually rose and the pain increased. On August 5, x-ray of the chest was negative. Blood count taken August 7 showed red blood count of 4,880,000, white blood count

26,200; Hb. 14.5 gms., count 100, segs. 78, lymphs 22; hematocrit 47, sed. rate 44 mm/ hr., and icterus index, 7 units. Urinalysis on August 8 showed occasional white blood cells and occasional epithelial cells; color, yellow, clear, acid reaction. Albumen and sugar negative. Sp. G. .015. On August 9, fluoroscopic examination of the abdomen showed limited excursion of both leaves of the diaphragm which, however, moved equally under quiet and forced respiration. Kidneys were normal in size and position. The left moved freely on forced respiration but the right seemed to be fixed. Psoas shadows were well outlined. The roentologist made a diagnosis of probable perinephric abscess and advised study with intravenous pyelography. Next day, x-ray examination of the gall-bladder by Graham Cole technique showed a normally functioning gall-bladder with no evidence of calculi. On August 14, intravenous pyelogram was made and roentgenologist reported it as follows:

"Both kidneys function well, and are well filled five minutes after injection; neither shows deformity of the pelvis or calices. The ureters are normal. Films made during forced respiration show free movement of the left; the right remained fixed and well outlined.

"Conclusion: Fixation of the right kidney, probably by perinephric abscess."

At about this time, the patient began to have pain in the left arm posteriorly, and rapidly developed a hard, tender mass in this region. Hot wet dressings were applied but the mass increased to the size of a grapefruit. No fluctuation was present; repeated blood cultures had been negative. Patient was transferred to the Surgical Service and on August 18 he was operated on, under general anesthesia, for perinephric abscess.

"Incision was made in the right kidney area posteriorly. The perirenal fat was indurated and adherent to the under surface of the muscles. With the finger the abscess was opened into, anterior to the upper part of the kidney. A large amount of thick, yellow, non-odorous pus was obtained. A specimen of the pus was taken for culture. The kidney was not explored. Three (3) doubled Penrose drains were inserted. The fascia was closed with a few interrupted sutures of chromic catgut. The skin was closed with black silk. The left arm was then palpated. It was felt that it was inadvisable to incise in this area at the present time."

The culture from the pus showed staphylococcus albus hemolyticus. In the first few days after operation the patient's general condition improved somewhat, but his temperature remained elevated and his left arm showed no change for the better. It was, therefore, decided to administer penicillin. This was started on August 26, 1943, and he was given 30,000 units intravenously every two hours for four days; then 20,000 units every two hours for two days more; and then 10,000 units for five days.

On the evening of the second day of treatment, the patient had a mild chill, and blood culture at that time produced a growth of staphylococcus albus, the same organism as the one found in the perinephric abscess. The temperature returned to normal in three days after starting penicillin and remained so, and the mass in the arm gradually decreased in size and tenderness, and finally became normal. Drainage from the abdominal wound ceased on September 20, and the patient made a spectacular recovery.

In the course of his 11-day treatment with penicillin, he received two-and-a-half million units.

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New Drug Aids Treatment of Meningitis.

The combined use of sulfonamides and penicillin in the treatment of pneumococcic meningitis (infection with pneumococci of the membranous lining of the brain and spinal cord) appears to be more effective than any previous method used in combating this disease, Antonio J. Waring, Jr., M. D., and Margaret H. D. Smith, M.D., Baltimore, report in *The Journal of the American Medical Association* for October 14.

Of 12 patients with the disease who were given combined penicillin and sulfonamide therapy, 11 recovered and 1 died. "These results," they say, "are better than our experience with sulfonamide alone, with sulfonamide and serum combined or with penicillin alone." They point out that prior to the development of the sulfonamides, pneumococcic meningitis was almost invariably a fatal disease. With the advent of the sulfonamides and later its combined use with serum, the mortality rate has been lowered to some extent.

They point out that the mortality rate of the disease is particularly high in infants. "Eight of our 12 cases," they say, "fall under 2 years of age. With serum and sulfonamide therapy we could have expected to lose 6 or 7 of these 8 infants. Under penicillin and sulfonamide therapy we lost 1. All 4 older patients recovered. Under the old form of therapy we would have expected to lose 1. . . ."

Waxed Paper from Cigarette Cartons Used as Surgical Dressing.

Captain Richard A. Twyman, MC, has discovered that waxed paper from the wrappers of cigarette cartons can be used to facilitate removal of surgical dressings when the usual nonadherent substances are unavailable. Holes are punched at quarter-inch intervals to permit drainage and irrigation. The waxed papers are washed with soap and water, placed in a shallow pan, wrapped like other surgical dressings and then sterilized in the usual manner.

THE CONTINUANCE OF SYMPTOMS AFTER SURGERY OF BILIARY TRACT*

ERNEST T. TRICE, LIEUTENANT COLONEL, M.C., U.S.A.,
Richmond, Virginia.

We now realize that disease of the bile tract is the commonest cause of upper abdominal discomfort. Graham and Cole¹ have asserted that they believe that 24 per cent of the adult population have gallstones and that an equal number have cholecystitis without calculi. It appears, therefore, that 40 to 50 per cent of the adult population have disorder of the biliary tract which may at any time give rise to active symptoms.

Equally interesting are the statistics of Mentzer,² who published the results of his findings in 612 routine post-mortem examinations prepared at the Mayo Clinic. In these, he found evidence of bile tract infection in 66 per cent of cases and in only 7 per cent had a primary diagnosis of cholecystitis been made. Only 5 per cent of 49,659 new cases entering the Mayo Clinic entered complaining of biliary disease as the primary symptom.

All the forces of organized surgical treatment have been mobilized to control this problem while medical attempts have in general been sporadic and disappointing.

The surgeon's approach is satisfactory in dealing with calculous cholecystitis, but that impairment is only part of widespread general pathology.

SURGICAL VERSUS MEDICAL TREATMENT

The literature contains many reports claiming excellent results obtained by the medical treatment of gallbladder disease. Blackford, King, and Sherwood,³ in a study of 200 patients from the Mason Clinic of Seattle, who were followed from five to fifteen years, give a typical report of the results of the medical treatment of cholecystitis. They summarize their report by stating that (1) their study confirms that cholecystitis may be treated successfully by medical measures; (2) the risk of developing a surgical emergency is no greater than that in the best gallbladder surgery; (3) thirty-seven per cent of their patients have had satisfactory results without operation over a period of eight years; (4) in forty-eight per cent of their patients who have not been treated surgically the disease either progressed to become surgical later or the patients should have

been operated upon later because of the continuation of their symptoms; (5) fifteen per cent of the patients were dead at the time of the report, and only one death was due directly to gallbladder disease. This is one of the many reports of the actual end-results of the medical treatment of cholecystitis. The literature of the past ten years revealed no more encouraging results.

Thus, in comparing the reported results of the medical treatment of cholecystitis with those of the surgical treatment, it appears that a report such as the above mentioned is not an encouraging one. It is certainly true that in properly selected cases of cholecystitis where operative intervention is thought indicated, the surgical results are far better than those claimed by this medical report. J. C. Ross⁴ has recently reported a study of the relief of symptoms in 153 cases of cholecystitis treated surgically. He concluded from this study that complete cure may be expected in 82.4 per cent of the cases operated upon, that 10.5 per cent of the cases are partially relieved, while 7 per cent remain in the same status as before operation. In his series, the symptoms of dyspepsia, anorexia, and gas completely disappeared in more than 80 per cent. He further concluded that the absence of stones in chronic cholecystitis renders the chances of a prospective cure much less, but in cases of acute cholecystitis the absence of stones has no effect whatever on affecting a cure.

The average period of convalescence before a patient resumed his duties was about thirteen weeks. Thus we see that the individuals who are given medical treatment have many more chances of continuing their symptoms than do the individuals who elect surgery. This surgical report is in accord with numerous other reports which could be mentioned. Suffice it to say that, on the basis of reports of medical versus surgical treatment, the end-results seem to be overwhelmingly in favor of properly applied surgery.

It is my belief that surgery early in the disease will lessen the mortality rate much more than when performed later in the course. Surgical intervention should be done early before the mucosa of the

*Read at the annual meeting of the Medical Society of Virginia in Roanoke, October 25-27, 1943.

gallbladder walls is destroyed, and the end-results will certainly be better if done before pericholecystic adhesions occur as a result of delay. Such ad-

but a delay may be hazardous to the future life of the patient.

INTER-RELATIONSHIP BETWEEN THE SECRETION OF THE PANCREAS AND BILIARY TRACT DISEASE

Pancreatitis in any form is often a grave catastrophe. Digestive ferments are present in the pancreas in an inactive form and are activated in the intestine by the bile. Thus, if there is an obstruction in the common duct by calculi incarcerated in the papilla so that the bile is forced up into the pancreatic duct instead of entering the intestine, the bile will activate the ferments while it is still in the pancreas and these ferments can then digest the pancreas.

H. L. Popper reported 200 gallbladder cases treated surgically. He stated that the bile contained

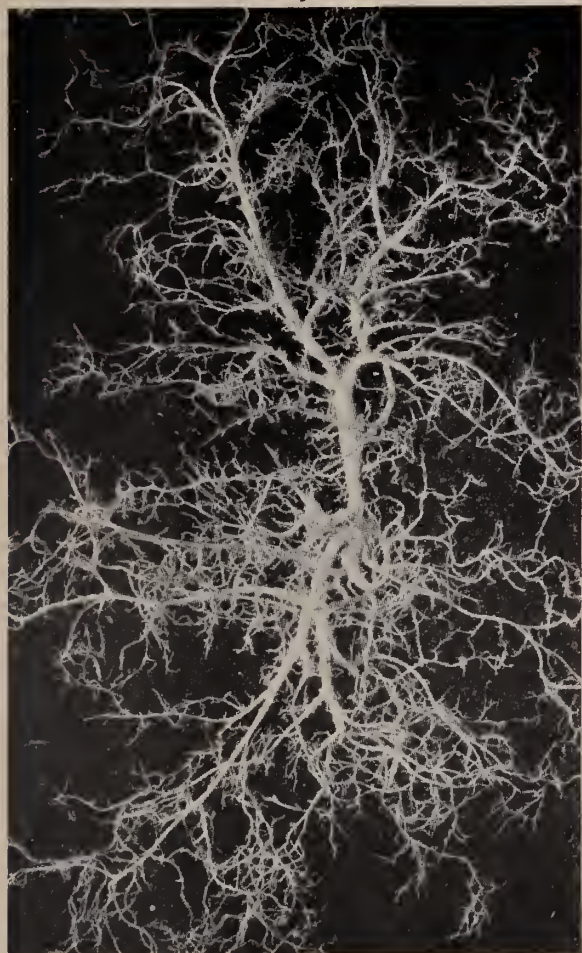


Fig. 1.—Normal biliary tree showing slender branches, vasa aberrantia, and parietal sacculi.

hesions between the gallbladder, pylorus and duodenum render the operation more difficult and more hazardous, and the results less satisfactory. Operation in the presence of jaundice is more than twice as hazardous as gallbladder or common-duct operations without jaundice. It is impossible to state how long a gallstone will remain latent and give no symptoms. There is always the danger of a stone becoming impacted in the cystic duct or of passing into the common duct and causing an obstruction. It would seem that the more conservative advice would be to remove the gallbladder with the stones before such a tragic occurrence. Not only is surgery to be recommended early for the reasons just stated,

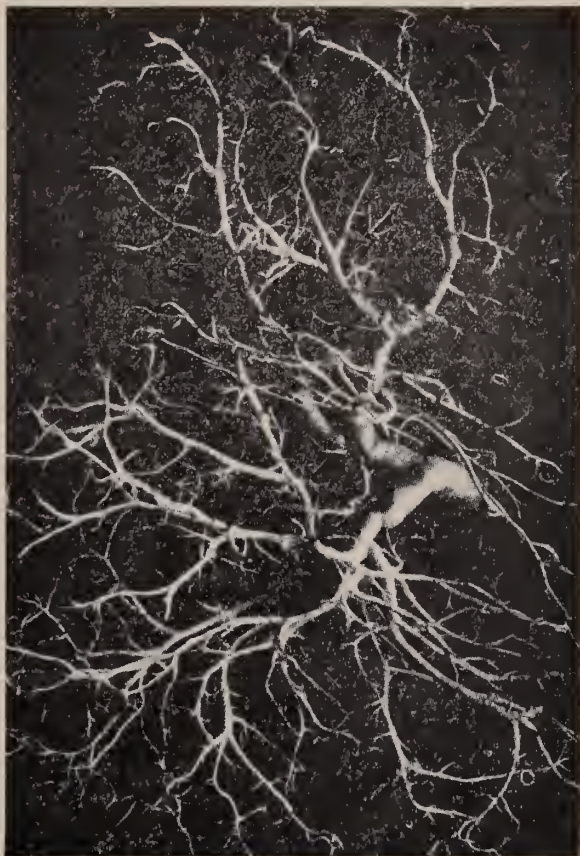


Fig. 2.—Cholelithiasis and functionless gall bladder; generalized mild dilatation of ducts.

abnormally high ferment values and gave as a reason the penetration of pancreatic fluid from the pancreatic duct into the common bile duct. His observa-

tion showed that in most cases of acute pancreatic disorders such an influx of pancreatic juice actually takes place. Normally, the flow of pancreatic fluid into the biliary passages occurs without further incident because the mixture rapidly flows out again, but in the event of disturbance of outflow at the ampulla of Vater there occurs an interaction of bile and pancreatic fluid on each side and a marked action on the tissues of each side of the ampulla.



Fig. 3.—Cholelithiasis and choledocholithiasis, generalized dilatation.

Fallis⁵ believes that the best explanation of the origin of pancreatitis is that bile enters the pancreatic ducts, activates the trypsin of the pancreatic juice, thereby producing autolysis of the gland, with resulting hemorrhage and necrosis. This theory receives support from autopsy findings and from experimental introduction of bile into the pancreatic duct.

Rich and Duff⁶ reported experimental and pathologic studies from the Johns Hopkins Hospital on the pathogenesis of acute hemorrhagic pancreatitis. They stated that there was a constant and a specific vascular lesion characterized by the rapid necrosis of the walls of the arteries and veins, and that necrosis was a direct result of the pancreatic juice. Pancreatitis, in their study, was shown to result from the disruption of the duct-acinar system, with consequent escape of the secretion into the interstitial tissue of the gland. Most of their cases resulted from obstruction to the outflow of secretion, which caused a distention and rupture of the ductules behind the obstruction. This thus proves the intimate relationship between the gallbladder and pancreas and further shows the danger of delaying surgery in cholecystic disease.

CHOLELITHIASIS AND LIVER DAMAGE

It is generally admitted that gallstones or cholecystic disease without calculi may exist for many years quiescent and asymptomatic. My experience is that such cases are prone to have a latent infection extend into the hepatic tissue and produce symptoms. At this stage, surgery may relieve the original infection, but the resulting discomfort from the liver damage is generally permanent.

There is a definite relationship between disease of the gallbladder and liver damage. Deaver, Pfeiffer, Sudler and Braithwaite⁷ have shown the intimate lymphatic and vascular association of the liver, the gallbladder, and the pancreas. It has been demonstrated that there is no lymphatic block between the liver and the gallbladder, the lymphatic channels passing uninterruptedly. It also has been shown that the lymphatic drainage from the area of the cystic duct is along the common duct to the under-surface of the liver.

Mogena⁸ tested the cystic bile obtained in cases of chronic cholecystitis with magnesium sulphate and the cultures were positive in 75 per cent of the cases. The frequent association of cholecystic dis-



Fig. 4.—Incomplete benign stricture; beginning sacculations of ducts with mild clubbing.

ease with hepatitis has been observed by many surgeons. This is easily understood and appreciated when one realizes the intimate lymphatic connections of the gallbladder with the liver.

The effect of cholecystitis on the hepatic biliary passages and the hepatic parenchyma is very forcefully shown by the post-mortem studies of twenty-six livers by McIndoe and Counseller⁹ by the cel-

loidin injection and corrosive method. The livers were carefully removed so as not to tear the capsule and were washed with cold water. They were then shrunk by weights and by wrapping them in many towels. These towels absorbed the moisture from the livers and left a spongy mass of tissue. The bile tracts were then injected with celloidin and allowed to fix. Following this, the liver tissue was corroded, allowing the true cast of the bile tract of the livers to remain. Several normal livers were also studied as controls. They thus measured the amount of bile tract dilatation in normal and diseased livers. Several livers were studied for the effect of various grades of cholecystitis and cholelithiasis, for the effect of cholecystectomy and benign and malignant

sulting from the pressure of the enlarged ducts and the obstruction of the portal venous flow from the lateral biliary pressure. The rapidity with which inflection follows with stones was emphasized. The results of this study thus show that cholecystic disease and extrahepatic biliary obstruction have a definite and damaging effect on the whole liver structure. It is easy to imagine that the longer that such cholecystic disease is permitted to remain, the longer



Fig. 5.—Complete malignant stricture of 6 weeks' duration: marked sacculation and clubbing of ducts.

strictures of the common duct. They were thus able to get a cast of the biliary tree showing the bile ducts, the vasa afferentia and the parietal sacculi. The calibre of both the large and small ducts of all the livers was carefully measured. These investigators were able to show a dilatation of the duct of varying degree which they termed a hydrohepatosis. The degree of hydrohepatosis in the cholecystic cases was mild in seven and absent in one. The livers of the patients who had had cholecystectomies for cholecystitis eight to ten days before death showed dilatation in all of the cases, but this was the least marked on one case in which there was an internal fistula between the gallbladder and the colon. In the five livers with benign or malignant strictures there was extensive dilatation of all of the ducts. These investigators concluded that there was an associated atrophy of the hepatic parenchyma re-



Fig. 6.—Complete malignant stricture of 8 weeks' duration: extreme hydrohepatosis.

and the more marked will be the damage to the liver.

Althausen¹⁰ has shown that the essential factor in the production of cirrhosis of the liver is any repeated agent capable of causing death to the hepatic cells. Following death to the cell there are two types of response to the injury; namely, a regeneration of the hepatic cells from a similar pre-existing cell and a sclerosis or a replacement fibrosis in that part of the framework of the liver. Mallory¹¹ describes an infectious cirrhosis which he says is due

to an ascending infection of the liver through the bile ducts, especially when there is more or less complete obstruction of the common bile duct. The most frequent invading bacteria are the colon bacilli.

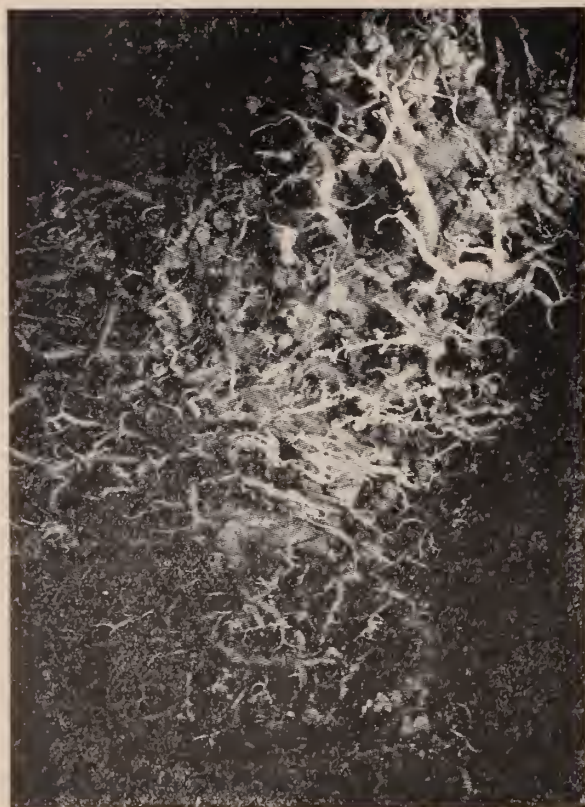


Fig. 7.—Superior surface showing complete stricture of 10 weeks' duration, with acute cholangitis and abscess formation.

This type of infection is, as a rule, diffuse and extends all through the liver.

He also describes another cirrhosis which he terms "obstructive cirrhosis". When the outflow of bile from the liver or any part is prevented, the bile ducts and capillaries in back of the obstruction become distended and the bile soon becomes thickened. This produces the condition of bile stasis. When a general bile stasis exists, the bile escapes from the dilated bile duct and also from the bile capillary near the portal vessels. Some of the liver cells are thus killed by the accumulation of bile in them and are replaced by newly formed cells. This ultimately results in a finely granular type of cirrhosis which is commonly called "biliary cirrhosis".

We often speak of portal and biliary cirrhosis as if they are always separate and distinct clinical and pathological entities. We know that such is not al-

ways the case. We know further that alcohol is not solely responsible for all cases of mixed cirrhosis. Cholecystic disease is thus a cause, at times, of cirrhosis of the liver.

Recently studies of the so-called "liver deaths" following surgery to the gallbladder have been made. Among such studies are those of Schutz, Helwig and Kuhn,¹² Heyd,¹³⁻¹⁴ Shearer,¹⁵ Boyce and McFetridge.¹⁶⁻¹⁷⁻¹⁸ Among the better studies of the so-called "liver deaths" following operations upon the gallbladder or the extrahepatic biliary ducts, or both, was the study of Schutz and Helwig.¹² These authors studied six of the so-called "liver deaths". One such death was in a young boy who died following a traumatic pulpification of the liver; four were deaths of long-standing cholecystitis following cholecystectomy; another death was that of an extensive carcinomatous metastasis into the liver from a cancer of the breast. All of these cases died in a

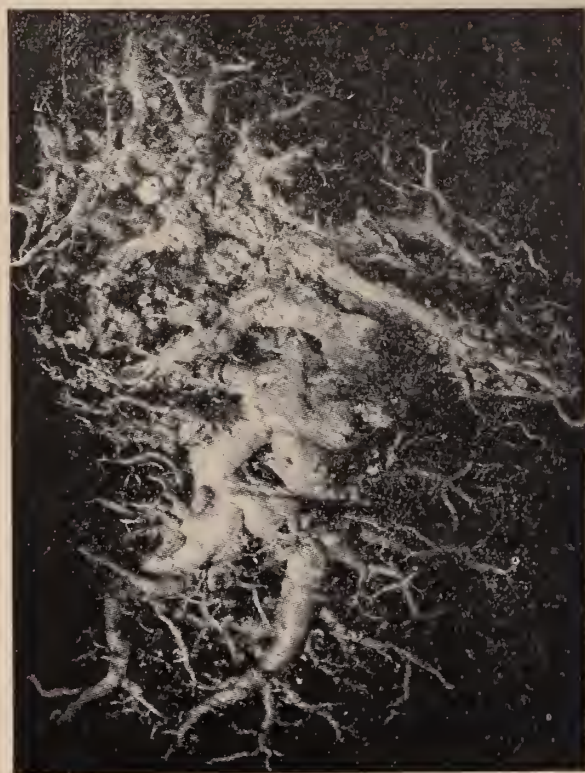


Fig. 8.—Inferior surface showing tremendous dilatation of ducts with multiple abscesses.

state which closely resembled uremia, and autopsy of all showed marked kidney damage. It was concluded that the deaths were due to some toxin which was elaborated in the diseased liver and acted di-

rectly on the kidneys, producing a profound degeneration which closely resembled nephrosis. All of the cholecystic cases were closely studied pre-operatively and all showed normal pre-operative blood and urine findings. On the fifth or sixth post-operative day there was a rise of temperature and pulse rate with abdominal distention. Following this, there was progressive oliguria with red blood cells and albumin in the urine. The patients quickly went into a state of coma and all of them died. The non-protein-nitrogen values in the blood were all markedly elevated, the output of urine was markedly diminished, and all the patients had marked nausea and vomiting. They also had bleeding from all the mucous surfaces. The terminal picture resembled that of uremia with generalized mild edema and an absolutely total anuria. Necropsies were done in all of these cases and all showed bleeding from the gastro-intestinal tract. The livers and kidneys of all of them showed striking degenerative changes and the pathologic studies of the kidneys showed a condition very closely resembling nephrosis. Jaundice was present in only one case. It was emphasized that the kidneys in the cholecystic cases were normal prior to surgery and for this reason it was believed that the kidney changes subsequent to operation were secondary to the liver changes. The important point which was stressed in this study was the fact that in all instances in which the gall-bladder disease was the reason for surgical intervention, a history was obtained of long-standing cholecystitis and at both the operation and autopsy extensive liver damage was encountered. Blood sugar determinations were normal throughout the lives of these patients, so that liver function had not ceased entirely; furthermore, there was no evidence of failure to de-amidize the amino-acids, because urea formation was unaltered and there was a progressive increase in the nitrogen products in the blood in all cases. This syndrome appeared to be most likely the result of long-standing surgical delay and the authors believe that their study showed hazards of surgical delay in long-standing cholecystitis. They believe that their study was further proof of the increasing surgical opinion that definite cholecystitis should not be subject to prolonged medical treatment.

From the aforementioned, it seems reasonable to state that surgical interference is the conservative

method of treating cholecystic disease and that long continued medical treatment gives not only doubtful results but deprives the patient of the optimum time for successful surgical therapy.

NOTE.—Illustrations are reproduced by courtesy of *Surgery, Gynecology and Obstetrics* from article by Counsellor, Virgil S., and McIndoe, Archibald H. Dilatation of the Bile Ducts (Hydrohepatosis) *Surg., Gyn. and Obst.* 43:729, 1926.

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DISCUSSION

DR. T. N. BARNETT, Richmond: This has been a most enlightening and convincing discussion of a pathological process and its remote results that influence a fairly large percentage of individuals of 40 years of age and over. It is timely in that bile tract infection and cholecystic disease, as any other infectious process, if left untreated, result in morbidity and increased mortality.

No one questions the rationale of the advantages of the surgical approach in the treatment of gall bladder disease, in the reasonably well selected cases. However, any suspected case of gall bladder disease should have the benefit of a thorough and careful evaluation of the clinical symptoms and laboratory studies including X-ray. It must be remembered that interrelation of symptoms not only from the abdominal organs but more remote organs as well can simulate gall bladder disease.

As organs interchange places, so the pain of each may be found over the usual site of the other, such as the high retrocecal appendix and the loin pain of cholelithiasis in contradistinction to the usual and time honored subscapular location. The syndrome produced by cardiovascular disease also often is confused with gall bladder disease. Thus a diagnosis of pain alone will not suffice and every aid may have to be resorted to.

That liver damage, in the form of a low grade hepatitis or localized cirrhosis results from cholecystitis, is definitely established. There is not sufficient data available to indicate that there is any appreciable number of patients who develop a demonstrable clinical cirrhosis. Due to the ability of the liver to compensate for an enormous amount of liver damage, liver function tests that are available give us very little aid.

It should also be remembered that gall bladder disease, and even gall stones, are often silent, and produce no systems—digestive or otherwise. This is evidenced by the number of people operated on for some other abdominal condition, who turn out to have one or the other of these diseases. It would indicate, therefore, that the symptoms vary with the individual or that there is a difference in the disease process.

As brilliant as the surgical results are, it is a well established fact that there is a fairly good number of cholecystectomized individuals who return shortly after operation with the same complaints and the added psychological factor of having been operated on and having received no benefit. These people can usually be catalogued as a wrong or incomplete diagnosis to start with. For example: Gastroenteroptosis often gives the same symptoms of gaseous distention, nausea, and abdominal pain not unlike chronic cholecystitis; also, achylia gastrica, the hypothyroid state, the spastic colon, pelvic diseases in women, and the menopause state in both women

and men give similar symptoms. The medical management of selected cases of gall bladder disease is often just as brilliant, if not quite so dramatic, as the surgical, and the mortality is practically nil as compared to surgery. Mortality is a factor that has to be reckoned with. I never have been able to accustom myself to having a patient die unexpectedly on the operating table or shortly after the operation. Non-surgical biliary drainage by transduodenal intubation is of value as a diagnostic procedure primarily, but it is also helpful in dyskinesia, and the chronically diseased gall bladder without stones. Chemo-therapy, on the whole, has been disappointing; however, everyone has been impressed by the improvement in the patient's symptoms following the ingestion of tetradol emulsion for cholecystograms. This preparation has a very high iodine content, and, in view of this observation, a small series of cases with non-filling gall bladders were given a dose of the tetradol emulsion at weekly intervals for four to six weeks, after which they were re-x-rayed and a normal sized, shaped functioning gall bladder demonstrated, together with a disappearance of symptoms. The fact that ingested fat leads to the production of cholecystokinin and thus causes evacuation of the gall bladder, makes it appear advisable for the patients to be given an adequate intake of fat, rather than the time honored low fat diet. Particularly is this true in the case of the asthenic, underweight individual with the atonic gall bladder, and it should be the procedure of choice with this type of patient. It favors the emptying of the gall bladder and thereby promotes drainage of the diseased organ. On the other hand, the irritable hypertonic gall bladder should have a low fat diet, as a high fat will increase the patient's distress. In these cases the antispasmodic drugs play a beneficial role.

The social and environmental status of the individual, the psychic make-up and the presence or absence of disease in other organs affect the prognosis in chronic cholecystitis; one becomes extremely cautious about holding out promises to the psychically unstable individual, since in such cases neither surgical nor medical treatment yields satisfactory results.

Gall stones produce a very real morbidity and constitute a definite menace to life, and where there is no contra-indication, cholecystectomy is advised.

DR. HUGH H. TROUT, Roanoke: When Colonel Trice asked me a short time ago to discuss this paper, I felt a hesitancy in accepting the invitation because of the fact that I happen to be down to discuss the next paper, and I do not want to appear too often before you. But, due to the fact that during the last two years there has been no man in the State of Virginia that has been of more help than Colonel Trice to the Procurement and Assignment Service of the State Medical Society, I have developed an affection and admiration for him that has made me willing to discuss this paper. My hesitancy was not because I am not interested in the subject, for I am greatly interested in it, but because I do not like a man who discusses every paper on the program.

This subject of the gall-bladder is one that has been

discussed by medical societies and surgeons and medical men ever since I graduated and, I think, for many years before that. Some years ago, you remember, one of the most brilliant and balanced surgeons in the world was Dr. Maurice H. Richardson of Boston. About 1900 he wrote two papers that attracted a great deal of attention. One was an address at a nurses' commencement entitled "The Over-trained Nurse and the Under-trained Doctor." Many of the doctors in the hospital did not speak to him at the conclusion of that address, and none of the nurses would speak to him. The other address was on "Symptoms Without Gallstones and Gallstones Without Symptoms."

In observing this question over the years, there is one thing that comes out very definitely to my way of thinking. That is, I know of no class of cases that gives us more trouble than these cases that have had the gall-bladders removed when there was no indication for their removal. I know of no class of cases in which it is more difficult to determine whether surgery should be resorted to or not. The selection of cases on which surgery should be done is really one of the hardest problems that we have to face, but there is no class of cases in which surgery gives more brilliant or satisfactory results than in these cases when wisely selected.

We have had some very interesting and trying experiences, as every surgeon has, with the reconstruction or attempted reconstruction of the common ducts that are injured by surgery following attempts at cholecystectomies by men that are not well trained—by the occasional surgeon. I know some men in this room have had exactly the same experience. I know that some men that do a small amount of surgery of the abdomen are a little slow about advocating cholecystectomy for fear of injury to the common duct.

As you probably know, Dr. Frank Lahey recently reported two instances of death following forcible dilatation of the common duct—not both in his hands, however. One was in his hands—and he is, I think, the master surgeon in America. It looks like a simple procedure, but you can do a tremendous amount of damage. I do not know but that I am at a stage right now in my career as a surgeon that unless the symptoms of common-duct obstruction are very marked, I am not going to do experimental dilatation or exploration of the common duct, unless I can have every reason to believe there is something in the common duct. When you have the common duct well exposed and can explore it safely without spreading pus, it is a safe procedure to explore it. It is not a safe thing to do otherwise, in my hands.

We have had a very pleasant experience with something that I rather hate to mention, because we do not know definitely about it. After our cholecystectomies, we routinely give these patients "decholin" (dehydrochloric acid) and glyceryltrinitrate (nitroglycerine). We give it several weeks after operation. The nitroglycerine relaxes the sphincter of Oddi, and the decholin stimulates the bile flow. We have had some cases in which we gave decholin with relief of common-duct symptoms which per-

sisted after cholecystectomies. Please do not take it that I am advocating it or that I believe in it too firmly. That we have had a pleasant experience with it is all that I can say. It does no harm and might do some good. Theoretically, it might force out of the common duct small stones or hard mucus that had been overlooked.

I think one of the greatest dangers we are seeing now in gall bladder surgery, and I think it is increasing with us, is that we see more and more post-operative trouble in the common duct from surgery than we do from gallstones. In other words, we are called upon to reconstruct the common duct more frequently in recent years, and in most every case the cholecystectomy has been done by the occasional operator. However, the experienced surgeon is not immune from this unpleasant experience.

DR. FRANK S. JOHNS, Richmond: There are just one or two points that I want to mention. Dr. Trice has spoken of injury to the common duct. I think, very definitely, that there is a procedure by which, if one follows it, there will be small chance for injury to the common duct. It is this: when attempting to remove the gall-bladder in cases in which you are concerned about the common duct, if the gall-bladder and cystic duct are buried or obscure, it is better when you apply your clamp to remove the gall-bladder *from above downward*. If you do so, you will have no injury to the common duct.

I have never seen an injury to the common duct and I hope I shall not have that experience; but, if there is any question about it, I do my removal of the gall-bladder from above downward.

There has been some discussion about the merits of medical or surgical treatment for gall-bladder disease. I do not think there should be any question on this subject. If the patient is relieved of his symptoms by medical treatment, then there is no need for surgery. If the symptoms are not relieved, and the patient has stones, he should be operated on.

Dr. Trice and Dr. Trout talked about the mortality of this disease. In gall-bladder surgery the mortality is in the lower brackets of operative deaths from major surgery. Appendicitis has a much higher mortality. In my series of cases the mortality of gall-bladder disease is about two per cent. Dr. Trice referred to deaths from anesthesia in gall-bladder surgery. That is the fault of the anesthetist. Just as soon as we get trained anesthetists, who are physicians, giving the anesthetics, this mortality will be lowered.

There is another point I want to emphasize. More than twenty years ago my preceptor, Dr. A. Murat Willis, advocated removal of the gall-bladder without drainage. In selected cases we do this today, and I consider it a procedure that should be adopted. A few years ago Cutler reported that he was closing forty-five per cent of his gall-bladder cases without drainage. We are not closing as many as that without drainage, but we do close a considerable number of these cases immediately. This procedure relieves some of the post-operative trouble we have heard about today.

COLONEL TRICE, in closing: I am, of course, very much obligated to those who took notice of my paper and to Dr. Barnett who brought out the background that I was undertaking to portray. All of us agree and no one denies that residual symptoms do follow cholecystectomy; furthermore, we agree that the subject of why we fail to completely relieve these patients has been neglected, as shown by the fact that the Year Books of General Medicine and General Surgery of the past ten years contain only two references to the subject.

This is an important but neglected chapter in the story of a patient's illness. The immediate future, of course, is important, whereas the ultimate result should be just as important and many times is more so. A conservative all-inclusive estimate of these cases varies between a high of 35 per cent and a low of 15 per cent. I observe poor cures most often in non-calculus cholecystitis where the symptom-producing mechanism of cholangitis, hepatitis, spasm, and damage to liver and pancreas is not removed and is only attacked indirectly. Accordingly, I regret that clinicians carry these persons through so many acute attacks, that they are unable to obtain better cooperation from the patient, and, most of all, a better criterion by which early infection of the bile tract can be recognized.

I was particularly interested in what Dr. Trout said about the use of nitroglycerine. I can appreciate that logic, because, in addition to infection, spasm has to be dealt with as a factor in poor drainage. Functional changes are often forgotten and may produce symptoms along with those caused by extensive, pathological conditions, and functional disease of biliary tract is beginning to assume the important place in diagnosis to which it is entitled. Early post-operative symptoms may be due entirely to an increased intraductal pressure, which is usually produced by a reflex spastic sphincter.

Symptoms under these circumstances are not accompanied by chills and fever, only by a low-grade fever, and being a neuromuscular affair is to be anticipated in the vagotonic personality. The status of functional disease is difficult to define and is always hard to evaluate. I believe Alvarez has said that there is no area of the body in which neuromuscular imbalance is as common as the upper right quadrant.

Dr. Johns referred to mortality, drainage, and technical procedure, and all that he has said has served to emphasize my subject of certain serious factors associated with the second most common operation performed in general practice.

Combine Immunization Against Whooping Cough, Diphtheria.

Studies show that infants can be immunized successfully against diphtheria and whooping cough at the same time, Louis W. Sauer, M.D.; Winston H. Tucker, M.D., and Eva Markley, R.N., Evanston, Ill., report in *The Journal of the American Medical Association* for August 5. This finding is important in view of the increasing number of immunization procedures required in early life to protect against various disease hazards.

"The routine injection of diphtheria toxoid [diphtheria toxin rendered nontoxic by incubation with formaldehyde] during the latter part of the first year of life," the investigators explain, "has almost completely eliminated diphtheria in most localities; and, during the time that infants after the age of 7 months have been injected with potent pertussis vaccine [the killed whooping cough bacteria], whooping cough morbidity and mortality have decreased at an encouraging rate.

"Because diphtheria and whooping cough are most prevalent and serious in the first years of life, it seemed logical that immunization against the two diseases should be attempted at the same time by

the injection of mixtures of diphtheria toxoid and potent pertussis vaccine. . . ."

They started their investigations in 1938. The present report is based on the findings from injections given 649 infants at the Evanston Health Department Immunization Clinic and at St. Vincent's Infant and Maternity Hospital, Chicago. All were more than 7 months of age when the injections were begun. The average age was about 8 months. Three doses were given each infant. To determine the time interval factor, the infants were injected at one week intervals at St. Vincent's and at three week intervals at the Evanston Health Department Clinic.

The three week intervals between the three doses yielded a higher percentage of immunity responses than when the doses were given at one week intervals. Ninety-seven per cent of the three week interval group had negative Schick tests for diphtheria and 72 per cent had high immunity tests for whooping cough. After a stimulating dose of pertussis vaccine, the whooping cough percentage rose to 95. Reactions were transient and usually mild.

The investigators say that "No infant so injected during the past five years . . . is known to have contracted either disease."

FEEDING PROBLEMS IN INFANTS*

ISA C. GRANT, M.D.,
Raiford Clinic,
Franklin, Virginia.

Dr. William McKim Marriott, formerly of St. Louis Children's Hospital, said there was perhaps no field in medical practice in which more difference of opinion has existed than in that of infant feeding. So numerous have been the theories advanced and diverse the various methods that the general practitioner could easily become hopelessly bewildered.¹ I do not propose to tell you how to feed every baby, but merely to outline to you the essentials in normal feeding, whereupon most problems should be eliminated. To the pediatrician this will be superfluous and is meant primarily as a review for the general practitioner.

There are two important considerations, however, that interfere with every well-outlined plan and should be stressed. First, every baby is an individual physically and mentally. Secondly, every mother is going to feed and care for her infant in a different way from every other mother.

Partly these individualities are inherited and partly they are a portion of the baby's own personality that is already beginning development. All newborn babies look alike to the casual observer, but actually during the first week their separate natures can be discerned. Anatomically infants differ also. Newborns generally have very poor development of the stomach, it being nothing more than a tube. It gradually increases in size as the infant is fed. Rarely an infant is born with a stomach of 2-3 ounce capacity. Some babies suffer from an anomaly that prevents them from taking food in the usual way. Most common of these is hare lip or cleft palate. Not infrequently we also find infants who manifest allergic responses to the diet offered. Theoretically and in institutions allergy does not occur in breast fed infants; however, I am sure all of you have seen it in your practice. It is my humble opinion that much emphasis is put on allergy unnecessarily. There remain, however, a few infants who will not thrive on any form of cow's milk. In such instance goat's milk will work in about 50 per cent of the cases, and Sobee or Mullsoy in the other 50 per cent.

Secondly, the manner and way in which an infant is fed is usually determined by his mother or nurse, and is also of utmost importance. Even at an early age a child will notice and can sense love. The great pediatrician, Dr. MacIntosh, it is said, frequently would write on the charts of small, malnourished infants, "Nurse to pick up and love every four hours." Too much loving is just as bad and may be defined as "smotherly love". However, the mother should always take the infant in her arms when feeding him. Also until the baby is able to hold his bottle himself, it should be held for him and not propped. I have been told that in a New York nursery the bottles are all strung across the room on a clothes line. They are dispersed at equal intervals immediately over the babies' beds. At feeding time clean full bottles are put into place and the line lowered so that a nipple goes into each little mouth. It may keep the infant from starving, but such practice could not make him thrive. He could lose the bottle frequently, gag, vomit and aspirate from too rapid feeding. Babies cannot be regimented.

To be considered also is what practical care can be provided most economically by his parents. It has been said that the stork is the only thing that discriminates in favor of the poor. The social conditions are frequently against the infant. It may mean lack of worldly goods to buy needed products, or lack of time to care for the infant. A baby has been described as the most extensive employer of female labor. Or it may be lack of intelligence to follow complicated directions in the preparation of a formula. Suffice it to say that the economic and social standards of the infant have a marked effect on its nutrition.

Now we come to the actual feeding of the infant. First, allow me to briefly review requirements of a normal baby. He should have 45 to 55 calories per pound daily, or 100 calories per kilogram, 3 to 4 gm. of protein, 1 gm. of calcium, 6 mgm. of iron, 1,500 I.U. of vitamin A, 0.4 mgm. of thiamine, 0.6 mg. of riboflavin, 4 mg. of niacine, 30 mg. of ascorbic acid, 400 to 800 I.U. units of vitamin D² per kilogram. You can partially understand what a wonderful thing mother's milk is when you consider that it contains

*Presented at the Second Session of the Raiford Summer Clinic at Franklin, August 30, 1944.

all of these and in addition probably antibodies against common disease. If possible, the infant should be nourished on breast milk. And if we were sure the mother was partaking of an adequate diet, no extra foods would have to be added until the baby was at least six months old.

Nowadays, however, we must face the problem of many mothers not wanting to feed their babies, and a few actually incapable of such. Perhaps the present pace of the young mothers does not permit formation of adequate milk supply. The element of worry in a world at war would also interfere. One of my professors used to say that to be a good cow, a mother must be contented. It is true artificial feeding is required more than ever. In order to fulfill the requirements listed above one and one-half to two ounces of whole milk per pound body weight must be added. It will furnish adequate protein, fat, calcium and vitamin B. Carbohydrates to supply extra calories and vitamins A, D, and C to supply minimum requirements, and in premature infants iron must be added. One ounce by weight of karo, dextrimaltose, lactose, or sucrose supply additional carbohydrate needs. Vitamins A and D may be supplied by giving one teaspoonful of cod liver oil twice daily. Vitamin C necessities can be met by giving one-half to two ounces of fresh orange juice daily. A solution containing adequate A, D, and C and freely miscible with milk is preferred by mothers. It is a Lilly product, Homicebrin. I cannot personally vouch for its efficacy, but reports state it is very good. If iron is needed it can be given in the form of ferrous sulfate, one teaspoonful added to two bottles daily. To satisfy fluid requirements two to two and one-half ounces of total fluid daily must be given.

In summary of the above, I will give you a formula that satisfies the needs mentioned. Given a baby two months old, weighing ten pounds, the following feeding should provide ample nutrition: whole milk 17 ounces, karo syrup 2 tablespoonfuls or one ounce, water six ounces—divide into five bottles of four ounces each. Give orange juice, 2 ounces daily, 10 drops of percomorph oil, or 2 teaspoonfuls of cod liver oil daily, or, instead of these, add one teaspoonful of Homicebrin daily to formula.

Unfortunately our problem is not yet solved. The baby is going to grow. And as he grows he is going to need more food. By the time the infant is 6 or 7

months old, he should be receiving one quart of whole milk or its equivalent daily in four feedings. At one month the vitamins mentioned above are added. At three months the infant may have one egg yolk daily. During the fourth and fifth months the first cereals may be started. At five to six months vegetables are added, and at 6 to 7 months dried fruits and applesauce. As soon as the infant has 6-8 teeth he may be given meats, dry toast, crackers, etc.

The above factors apply to the healthy, robust infant. However, it isn't as easy as that. First of all, many infants cannot digest the proteins of ordinary whole cow's milk. Boiling it modifies the proteins, but unfortunately it destroys some of the vitamin content in so doing. Evaporated milks such as Pet, Borden, and Carnation may also be used. Their proteins have been changed by heat, and they have been irradiated to supply extra vitamins lost in the heating process. This milk also has the advantage of being economically in the reach of most families. Much safer, however, is the lactic acid milk. In addition to having the protein changed, it also has enough acid content to prevent growth of pathogenic bacteria. It has a slightly sour taste and some infants will at first refuse it. Later they prefer it and may refuse sweet milk. For these reasons lactic acid is to be preferred over all other artificial feedings. Dr. Wilburt C. Davison, Dean of Duke University, is so impressed by this type of milk that he states it can be given undiluted from the time the infant is born.³ The feeding may be prepared by adding to the chilled quart of whole milk or evaporated milk one teaspoonful of lactic acid, drop by drop, stirring or beating constantly. Or a whole lactic acid preparation such as Mead's may be used. This milk comes in powdered form and one tablespoonful diluted to two ounces is equivalent to whole lactic milk.

By what criteria are we to measure the efficacy of the formula? First of all, the infant should gain from one and one-half to two pounds monthly. Then, is the infant vomiting, or having diarrhea, constipation or colic? Organic and infectious causes for these signs must be ruled out by physical and laboratory examination. Vomiting may be due to swallowing of air, over-distention of the stomach by too frequent or too large feedings, unsuitable composition of food as too much fat, improper clothing or

handling, or, in rare instances, rumination and, rarest of all, allergy. Diarrhea may be due to over-feeding, in which case stools are bulky with undigested food present; or to under-feeding, when stools are small, liquid, greenish and frequent; or when there is too much fat, in which event undigested particles of fat can be seen; or when there is too much sugar, in which case stools are liquid and brown; or to autonomic imbalance. Constipation may be caused by innate sluggishness of the bowel, with relatively too much protein or too little carbohydrate. Colic is the "bugabear" of most physicians. Mild and true colic should be differentiated. In true colic the infant screams until the face is suffused and he suffers actual paroxysms of pain. The most common cause is under-feeding and a resultant swallowing of air from sucking the fingers, sheet, or whatnot. When the intestines are distended the infant experiences pain just as any adult would from distention of a hollow viscus. Most frequently the immediate attack can be relieved by assisting the infant to rid himself of extra gas; first by placing

him over your shoulder and patting the back gently, then placing him in bed over a hot water bottle. A low warm enema may also give relief.

In closing, may I briefly stress two points: first, modifications must always be made for the babies' individual and anatomic needs. No one rule will fit every baby. And, second, in feeding the baby, you must remember the mother is also going to need your skill, and in many instances more than the baby does.

REFERENCES

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2. Davison, Wilburt C.: *The Compleat Pediatrician*, Duke University Press, 1943, p. 213.
3. Davison, Wilburt C.: *The Compleat Pediatrician*, Duke University Press, 1943, p. 215.
4. Marriott and Jeans: *Infant Nutrition*, C. V. Mosby Co., St. Louis, 1941, pp. 334, 337.
5. Brennemann, Joseph: *Artificial Feeding of Infants; also Minor Nutritional and Digestive Disorders of the Artificially Fed Infant*, W. F. Prior Company, Inc., Hagerstown, Maryland, 1944.

Promin, Diasone, Promizole.

The Committee on Therapy of the American Trudeau Society, recently reported that Promin, Diasone, Promizole and certain related compounds appear to possess in varying degree the ability to restrain development of experimentally induced tuberculosis in guinea pigs. It is recognized that this offers many contrasts with clinical tuberculosis in humans, even though the causative organism is the same.

Clinical and roentgenological data so far made available are as yet inadequate both quantitatively and qualitatively to permit, even tentatively, a positive evaluation of the curative effects of such drugs upon tuberculosis in human beings. Until controlled studies of adequate scope have been reported it is recommended that none of these drugs be used for treating tuberculous patients except under condi-

tions which will add to our knowledge of their clinical action, and in the presence of adequate facilities to protect patients effectively from their potentially serious toxic effects. Patients and physicians must be reminded of the Federal regulations which prohibit distribution of a drug in the experimental phase of development to other than research institutions to which the material is assigned by the manufacturer for either laboratory or clinical investigation.

Any use of chemotherapeutic agents in the treatment of tuberculous patients must, therefore, be regarded as a purely clinical investigation. It must be emphasized that such use is not without hazard and that the roentgenological and clinical evidence reviewed gives no justification at this time for more than a critical interest in the value of these drugs in patients. (*Amer. Rev. of Tuber.*, Apr. 1944).

REPORT OF MATERNAL DEATHS

MATERNAL HEALTH COMMITTEE,
MEDICAL SOCIETY OF VIRGINIA

Ninety-Three Deaths Due to Eclampsia

There were 607 maternal deaths in Virginia during the 2½ years from December, 1939, to May, 1942. The study of these deaths shows that 93 were due to eclampsia. The usual residence of each case is shown on the accompanying map. Approx-

mately two-thirds of these deaths occurred in the eastern half of the State.

Additional comments will appear in later issues of the MONTHLY.



Generals Bliss and Rankin Return from Pacific Tour.

Brigadier General R. W. Bliss, USA, Assistant Surgeon General and Brigadier General F. W. Rankin, USA, Director of the Surgical Consultants Division, returned recently from a tour of inspection which included Honolulu, Maui, Canton, Nandi, Tantonio, Noumea, Espiritu Santo, Guadalcanal, Russell Island, Tarawa, Makin, Kwajalein, Saipan, Tinian and Guam. Both were impressed with the success of the malaria control work in the Pacific and the effectiveness of DDT in killing mosquitoes.

In one section, which had previously the highest rate of malaria, not a mosquito was seen.

On their trip the officers saw how the Medical Department has organized Honolulu to care for Japanese-front casualties. A new \$16,000,000 hospital is being built there and other suitable buildings have been converted into additional hospitals.

Both officers were impressed with the efficient evacuation of the wounded from all the islands visited. Between 80 and 100 wounded, they reported, are transported daily to San Francisco by planes carrying a nurse and a medical corpsman especially trained in air evacuation.

PUBLIC HEALTH

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for October, 1944, as compared with the same month in 1943, and for the period of January through October, 1944, compared with the same period in 1943, follows:

	OCT.		JAN.-	
	1944	1943	OCT. 1944	OCT. 1943
Typhoid and Paratyphoid Fever	12	31	115	195
Diarrhea and Dysentery	555	473	5,804	5,170
Measles	20	273	17,051	9,665
Scarlet Fever	229	178	2,342	1,407
Diphtheria	46	76	237	313
Poliomyelitis	104	15	708	56
Meningitis	16	42	484	773
Undulant Fever	2	5	35	33
Rocky Mountain Spotted Fever	3	3	79	54
Tularemia	2	3	41	42

TRENDS OF INFANT MORTALITY IN VIRGINIA

Due to an unusually large number of births occurring during wartime, especial interest, at present, centers in infant mortality. The achievements in the prevention of infant deaths during the past quarter of a century are clearly seen in the steady downward trend of mortality rates. In the discussion of infant mortality trends, emphasis should be placed upon the necessity for complete registration of births and infant deaths in order to secure an accurate measurement of infant mortality. Since the computed rates are based upon births, it is obvious that lack of completeness of birth registration would result in overestimating infant mortality, whereas underregistration of infant deaths would effect an undervaluation.

Between the years 1919 and 1943, the infant death rate in Virginia declined 45 per cent. The number of deaths of infants under one year in 1919 (5,533) with a rate of 87.7 per 1,000 live births dropped to 3,313 (rate 48.4) in 1943. Although the colored rate is much higher than the white, reductions during the past 25 years have occurred among both races in almost equal proportions. The white rate (74.8) in 1919 declined to 41.5 in 1943; the colored rate (116.0) fell to 69.1 last year.

From the standpoint of mortality, the most haz-

ardous period of infancy is at birth. In 1943 in the State among 1,000 infants born alive, 13.3 died during the first twenty-four hours. During the past quarter of a century, little improvement is seen in the death rate for infants under 1 day. In fact, the State rate of 15.3 in 1919 rose to its maximum (18.6) in 1934 and continued above the 1919 level until 1942 and 1943, in which years there was a decline to 14.1 and 13.3, respectively.

Despite the fact that after the first day of life the chances of survival of the newborn infant are somewhat better, mortality rates for infants 1 to 6 days (inclusive) are still excessively high. Only slight improvement in the reduction of these rates is noted. The rate of 11.9 per 1,000 live births in 1919 fell to 10.2 in 1943.

The decline in mortality, however, becomes greater as the infant grows older, and after the first week of life, death rates maintain a significant and constant downward trend. Mortality for the 7 to 29 day-old infant in the State declined to 5.8 in 1943, which was less than one-half of the rate (12.0) in 1919.

The greatest progress in the reduction of infant mortality is seen among infants 1 to 11 months of age (inclusive). During the past quarter of a century in Virginia, there was a rate decrease of 61 per cent among this age-group. The rate of 48.4 in 1919 was reduced to 19.1 in 1943.

During the first month following birth, the major causes of infant deaths are premature birth, injury at birth, congenital malformations, congenital debility, and other diseases peculiar to early infancy. It is noteworthy that premature birth takes more than twice the death toll among this group as the other causes combined. In 1943, among 2,007 deaths of infants under one month in the State, natal and prenatal causes totaled 1,678, constituting 84 per cent of neonatal mortality. It is a significant fact, also, that almost one-half (45 per cent) of these deaths occurred during the first day of life, comprising 93 per cent of infant mortality under 1 day.

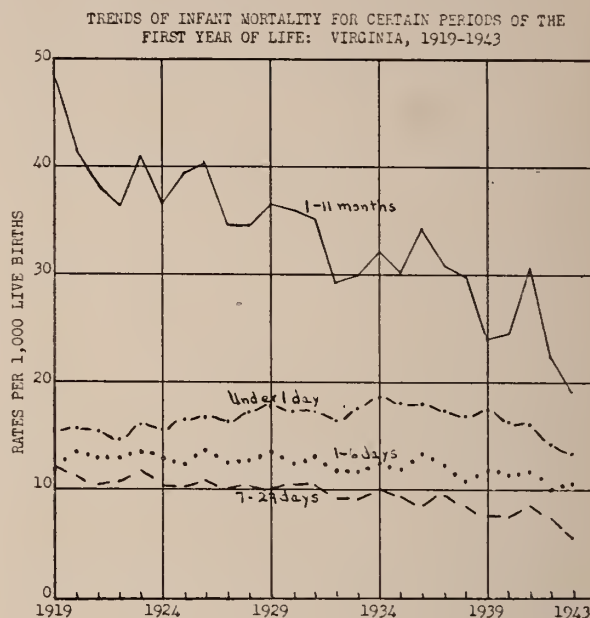
After the first month of life, prenatal and natal causes become relatively unimportant. During the

age-period 1 to 11 months, the gastrointestinal respiratory, and infectious diseases become prominent factors in infant mortality. In 1943 in the State, this group of causes numbered 833 comprising 64 per cent of the 1,306 infant deaths from all causes over one month. Deaths from respiratory causes, including pneumonia, totaled 415; infectious diseases, 222; and gastrointestinal diseases, 196.

The graph below shows the trend of infant mortality during the past quarter of a century in Virginia. Note the steep downward trend in death rates for infants 1 to 11 months, and the less rapid decline for infants 7 to 29 days old. A slightly upward swing is observed for infants under one day until the year 1934, after which a gradual decline is noted, becoming accelerated after 1941. No appreciable trend is seen for infants 1 to 6 days of age until 1936, when a slight downward movement begins.

The decline in total infant mortality has been brought about, for the most part, by a reduction in deaths from causes other than prenatal or natal. The spectacular decline in rates during the past 25 years has occurred among infants 1 to 11 months of age. This is undoubtedly due to better infant care, to sanitation, and to the prevention of communicable diseases. The benefits of prenatal care of

mothers, increased medical attendance, and facilities for hospital deliveries with care of premature infants, however, are reflected in the lowered mortal-



ity rates during the past two years among very young infants. This recent downward trend among the newlyborn no doubt will show continued improvement in the coming years.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, under usual library rules:

- Alexander, J.—Theory and methods, pt. 1. Biology and medicine, pt. 2. Vol. V.
 Arkansas State Department of Education—Nature study and conservation. Bull. No. 11.
 Cutting—Manual of clinical therapeutics. 1944.
 Davenport—The valley of decision. (Novel.)
 Deming—Statistical adjustment of data.
 Deutsch, H.—The psychology of women: a psychoanalytic interpretation. Vol. 1. 1944.
 Diehl, H. S.—Healthful living for nurses.
 Dunbar, F.—Psychosomatic diagnosis. 1943.
 Ebert, E.—The Brush Foundation Study of Child Growth and Development. I. Psychometric tests. 1943.
 Forbus—Reaction to injury. 1943.
 Gesell, A.—Infant and child in the culture of today. 1943.
 Gurd—Technique in trauma. 1944.
 Harris—Vitamins and hormones. v. 2. 1944.

Heckert and Dickerson—Drug store accounting.

Kerr—The urinary tract. 1944.

Kreider—Measles pneumonia and encephalomyelitis. 1943.

Meakins—The practice of medicine. 2nd ed. 1944.

National Council of American Society—Science in Soviet Russia.

Norwood—Medical education in the United States before the Civil War. 1944.

Odum—Race and rumors of race.

Phelps—Your arthritis: What you can do about it. 1943.

Piney—Sternal puncture: a method of clinical and cytological investigation.

Read—Childbirth without fear: The principles and practice of childbirth. 1944

Rugen—Problems of methods and materials in health education.

Semeonoff—A new Russian grammar in two parts.

Semeonoff—Key to a new Russian grammar.

Smith—Strange fruit. (Novel.)

Turner—Organizing to help the handicapped.

Worthing—Treatment of experimental data.

X-Ray—1943.

CORRESPONDENCE

Virginia Medical Service Association.

TO: MEMBERS, MEDICAL SOCIETY OF VIRGINIA.

From: Alex. F. Robertson, Jr., President, Virginia Medical Service Association, (formerly Associated Doctors of Virginia).

Your House of Delegates, on October 23 last, approved the Medical-Surgical-Obstetrical Service Plan for Virginia. This approval in no way commits you or any other member of the Society to participate in the Plan. We believe, however, that you should participate.

State Medical Societies which have endorsed Medical Service Plans include California, Colorado, Delaware, Massachusetts, Michigan, Missouri, New Hampshire, New Jersey, North Carolina, Pennsylvania. The majority of their members are participating in the plans. As only Doctors are qualified to treat the ill, in like manner, only Doctors can prevent Socialized Medicine. The only way this can be done is by spreading the cost of illness. Medical Service Plans like Blue Cross Plans do this very thing. The two Plans—Medical and Hospital—can solve the economic problem of the medium and low income groups in so satisfactory a manner that Government can then devote its energies toward assuming responsibility for the care of the indigent sick.

The income limits for complete service under this plan make it possible for doctors to make their regular fees to those with incomes in excess of these limits. Payment for medical services through small monthly amounts, in advance of need, will make it possible for many of the medically indigent to become pay patients. The schedule of fees, set forth as units of service, should be reviewed with the following facts in mind: first, those of the public with incomes less than the limits set forth who are not willing to be charity patients, through this method of spreading the cost, can afford adequate medical care; second, the fees proposed are fair for this income group; third, payment will be received from 100 per cent of the Subscriber cases as opposed to the professional experience of 70 per cent to 80 per cent of all cases now; fourth, many patients formerly receiving gratuitous or courtesy service and many of the so-called medically indigent will become medically self-supporting.

You are urged to secure approval of this plan by your local Society and to participate in this plan to place medical expense in the family budget.

For further information write to Virginia Medical Service Association, 21st Floor, Central National Bank Building, Richmond 19, Virginia.

**Medical-Surgical-Obstetrical Service Plan
Presented to the House of Delegates of the
Medical Society of Virginia**

In 1939 this House of Delegates approved the principle of prepayment for medical services. Since that time non-profit hospital service plans have been put into effect in Virginia, largely through the agency of the Blue Cross Plans.

All of us who have been interested in medical economics have felt that, if voluntary prepayment for unpredictable, or so-called catastrophic illnesses could be generally adopted, the argument for socialized medicine would be in a large measure neutralized. The addition of prepaid medical services, while in the hospital, to the already existing hospital service plans would provide the means by which those in the lower income groups would be able to obtain adequate medical care in most circumstances.

In August, 1944, representatives of hospitals serving sixty-seven counties in Virginia, and of the Richmond Hospital Service Association, attended a conference as guests of the Raiford Clinic Staff. As a result of the interest shown at this and at other meetings, a plan was worked out with legal and actuarial assistance. This plan is to be administered by an association of doctors participating in the plan and known as the Associated Doctors of Virginia (now Virginia Medical Service Association). The doctors will have control of the affairs and policies of the association. Patient-doctor relationship, the free choice of physicians and the preservation of the present system of the practice of medicine will be safe-guarded. The plan will differ from our present system only in the method used to pay for services. A majority of the board of directors shall consist of doctors.

During the first year this plan is put into effect, the coverage will be for personal professional services and partially for X-ray services, with such limitations as may be found necessary by the board of directors. The Association will employ the Richmond Hospital Service Association, and other Hospital Service Plans in Virginia, as the agencies for offering the certificates to the public, collecting the dues, paying the doctors, and keeping statistical data.

Membership in a Hospital Service plan shall be a prerequisite for this service.

The public will be divided into two income classes. For those below the following levels, the certificates will cover the full costs of professional care:

Single subscriber—maximum income— \$2,000.00 a year
 Man and wife—maximum income— \$2,500.00 a year
 Family (including children under 19)—
 maximum income ————— \$3,000.00 a year

For those above these levels the plan will pay according to the schedule of fees and the doctor will bill the patient direct for the amount of his regular fee over the schedule. The schedule of fees is essentially that used in Massachusetts, Michigan, New York and New Jersey.

The right which doctors now have to decline services will not be affected by the plan.

The following resolution is presented:

WHEREAS, the Medical Society of Virginia in 1939 approved the principle of voluntary prepayment for medical services, and

WHEREAS, it is believed that the state-wide acceptance of such a plan, under the control of the medical profession, would be highly effective in providing a better distribution of medical services to those in the lower income groups, and

WHEREAS, such plans widely adopted throughout the nation would safeguard the interests of the medical profession and constitute a powerful weapon against socialized medicine, therefore,

BE IT RESOLVED, that the Medical Society of Virginia endorse the Medical Service Plan of the Associated Doctors of Virginia (known as Virginia Medical Service Association) and recommend its acceptance by the doctors and hospitals in its various counties.

ALEX. F. ROBERTSON, JR.,
Board of Directors.

This, being duly seconded, was approved by the House of Delegates of the Medical Society of Virginia at their regular session, Monday afternoon, October 23, 1944.

Schedule of Operations and Maximum Amounts of Reimbursement Therefor in Terms of Units of Service. A Unit has a Nominal Value of \$1.00

ABDOMEN

Appendectomy (uncomplicated)	75.00
Gastrectomy	150.00
Other cutting into abdominal cavity for diagnosis or treatment of organs therein (unless otherwise specified below)	125.00
Exploratory only	75.00

AMPUTATION OF

Thigh	100.00
Leg, entire foot, arm, forearm or entire hand	75.00
Fingers or toes, each	10.00
For multiple-maximum	25.00

BLOOD TRANSFUSIONS, EACH

Recipient of	25.00
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BREAST

Simple amputation	50.00
Radical amputation	125.00
Removal of cysts or benign tumors	20.00
Abscess, deep (furuncles excepted)	25.00

CHEST

Complete thoracoplasty, or removal of portion of lung	150.00
Other cutting into thoracic cavity for diagnosis or treatment (tapping excepted)	50.00
Initial induction of artificial pneumothorax	25.00

DISLOCATION, REDUCTION OF

Hip or knee joint (patella excepted)	35.00
Shoulder, elbow or ankle joint	25.00
Lower jaw	15.00
Collar bone or wrist	10.00

For dislocation requiring open operation the maximum amount of reimbursement will be twice the corresponding amount shown above.

EXCISION OR FIXATION BY CUTTING

Shoulder, hip or sacro-iliac joint	100.00
Knee joint	75.00
Elbow, wrist or ankle joint	50.00
Diseased portion of bone, including curettage (alveolar processes and amputations excepted)	50.00

EAR, NOSE OR THROAT

Mastoidectomy:	
One side	75.00
Both sides	100.00
Tonsillectomy, adenoidectomy or Tonsillectomy and adenoidectomy:	
Subscribers under 12 years of age	25.00
Subscribers of or over 12 years of age	35.00
Sinus operation by cutting (puncture of antrum excepted)	35.00
Submucous resection of nasal septum	50.00
Bronchoscopy for drainage, biopsy or removal of foreign body or obstruction	35.00
Cutting into the trachea	35.00
Other cutting operation (puncture of antrum and tapping excepted)	10.00

EYE

Removal of cataract	75.00
Needling of cataract	25.00
Any cutting operation into the eyeball (through the cornea or sclera)	50.00
Removal of eyeball	50.00
Cutting of extrinsic eye muscles	35.00
Other cutting operation on eyeball or eye muscles	20.00

FRACTURE, TREATMENT OF

Thigh, leg, kneecap, upper arm, vertebra or vertebrae, or pelvis (coccyx and vertebral processes excepted)	75.00
Lower jaw (alveolar processes excepted), skull, collar bone, shoulder blade or forearm	35.00
Wrist, hand, ankle or foot	25.00
Fingers or toes, each	10.00
Nose, rib or ribs	10.00

The amounts shown above are for simple fractures—single or multiple. For compound fracture, the maximum amount of reimbursement will be one and one-half times the corresponding amount shown above.

For fracture requiring open operation, the maximum amount of reimbursement will be twice the corresponding amount shown above. (Coccyx excepted.)

N. B. Only one amount, the greater, will be allowed for any one person in any one period of disability, even though two or more unrelated operations are performed.

GENITO-URINARY TRACT

Removal of kidney	150.00
Cutting into or fixation of kidney (other than removal of tumors or stones)	100.00
Removal of tumors or stones in kidney, ureter or bladder:	
By open operation	100.00
By crushing, cauterization or endoscopic means	25.00
Stricture of Urethra:	
Open operation	50.00
Intra-urethral cutting operation	25.00
Removal of entire prostate by open operation (complete procedure)	150.00
Removal of part of Prostate:	
By endoscopic means	50.00
By other cutting operation	75.00
Circumcision (only of subscribers of or over 12 years of age)	15.00
Varicocele, cutting operation on	25.00
Hydrocele, excision or incision and treatment of sac (tapping excepted)	25.00
Orchidectomy or epididymectomy	35.00
Complete removal of uterus (tubes and ovaries)	150.00
Other cutting operations on uterus and its appendages:	
With abdominal approach	100.00
Without abdominal approach	50.00
Dilatation and curettage (non-puerperal)	25.00

GOITRE

Thyroidectomy (complete procedure, including ligation of thyroid arteries, to be treated as one operation)	125.00
Ligation of thyroid arteries not followed by thyroidectomy:	
One or more at one operation	50.00
Two or more stage operation (complete procedure to be treated as one operation)	75.00

HERNIA, CUTTING OPERATION

FOR RADICAL CURE

Single hernia	75.00
More than one hernia	100.00

JOINT

Incision into (tapping excepted)	25.00
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LIGAMENTS OR TENDONS

Cutting operation	25.00
Suturing of tendons:	
Single or double	25.00
Multiple	50.00

PARACENTESIS, TAPPING OF

Abdomen, chest or bladder (other than catheterization)	10.00
Ear-drum, hydrocele, joint or spine	10.00

RECTUM

Abdomino-perineal resection	150.00
Cutting operation or injection treatment for radical cure of hemorrhoids (complete procedure):	
External	25.00
Internal	50.00
Cutting operation for prolapsed rectum or fistula in ano	25.00
Cutting operation for fissure	10.00

SKULL

Cutting into cranial cavity ("drill taps" excepted)	150.00
"Drills taps"	25.00

SPINE OR SPINAL CORD

Operation with removal of portion of vertebra or vertebrae (coccyx and vertebral processes excepted)	150.00
Removal of part or all of coccyx	50.00

TUMORS

Removal of, by cutting operations:	
Malignant tumors (except those of face, lip, or skin)	100.00
Malignant tumors of face, lip or skin	25.00
Benign tumors, one or more	25.00

VARICOSE VEINS

Cutting operation or injection treatment (complete procedure on all veins)	25.00
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OBSTETRICAL CASES AND CONDITIONS ARISING OUT OF AND DURING PREGNANCY

Delivery of child or children	50.00
Including pre- and post-care	75.00
Caesarean section, including delivery	100.00
Abdominal operation for extrauterine pregnancy	100.00
Miscarriage (abortion)	25.00

For any operation not listed in this schedule of operations, the Association reserves the right in its sole discretion to determine the amount of reimbursement, if any, to be paid.

MEDICAL CASES (IN HOSPITALS OVER 3 DAYS) FOR NOT MORE THAN 35 DAYS:

First visit	5.00
Second and subsequent visits	2.00
Second visit same day	1.00
Consultation	10.00

N. B. Medical visits for Surgical-Obstetrical Cases not included, except when surgeon or obstetrician requests consultation or, with medical complications, treatment.

X-rays, diagnostic (only to the extent necessary for the hospitalized conditions enumerated above) not to exceed 50 per cent of the cost for such to a total of \$10.00 in any certificate year.

Presidents of the Medical Society of Virginia

PRESIDENT	YEAR OF MEETING	PRESIDENT	YEAR OF MEETING
*Dr. James McClurg, Richmond	1821	*Dr. Geo. Ben Johnston, Richmond	1897
*Dr. William Foushee, Richmond	1822	*Dr. Lewis E. Harvie, Danville	1898
*Dr. William Foushee, Richmond	1823	*Dr. Jacob Michaux, Richmond	1899
*Dr. James Henderson, Richmond	1824	*Dr. Hugh T. Nelson, Charlottesville	1900
Meetings Discontinued.		*Dr. J. R. Gildersleeve, Tazewell	1901
*Dr. Robert William Haxall, Richmond	1841	*Dr. R. S. Martin, Stuart	1902
*Dr. Robert William Haxall, Richmond	1842	*Dr. J. N. Upshur, Richmond	1903
*Dr. Frederick Marx, Richmond	1843	*Dr. Joseph A. Gale, Roanoke	1904
*Dr. Thomas Nelson, Richmond	1844	*Dr. Wm. S. Christian, Urbanna	1905
*Dr. William A. Patteson, Richmond	1845	Dr. Lomax Gwathmey, Norfolk	1906
*Dr. William A. Patteson, Richmond	1846	*Dr. Paul B. Barringer, Charlottesville	1907
*Dr. John A. Cunningham, Richmond	1847	*Dr. Wm. F. Drewry, Petersburg	1908
*Dr. William A. Patteson, Richmond	1848	Dr. Stuart McGuire, Richmond	1909
	1849	*Dr. E. T. Brady, Abingdon	1910
*Dr. Robert William Haxall, Richmond	1850	*Dr. O. C. Wright, Jarratt	1911
*Dr. Beverley R. Wellford, Fredericksburg	1851	*Dr. Hugh M. Taylor, Richmond	1912
*Dr. James Beale, Richmond	1852	*Dr. Southgate Leigh, Norfolk	1913
*Dr. Thomas P. Atkinson, Danville	1853	*Dr. Stephen Harnsberger, Catlett	1914
*Dr. Carter P. Johnson, Richmond	1854	*Dr. Samuel Lile, Lynchburg	1915
*Dr. H. C. Worsham, Dinwiddie	1855	*Dr. Joseph A. White, Richmond	1916
*Dr. H. C. Worsham, Dinwiddie	1856	*Dr. Geo. A. Stover, South Boston	1917
*Dr. James Bolton, Richmond	1857	*Dr. E. G. Williams, Richmond	1919†
*Dr. Levin S. Joynes, Richmond	1858	*Dr. Paulus A. Irving, Farmville	1920
Meetings Discontinued		*Dr. Alfred L. Gray, Richmond	1921
*Dr. R. S. Payne, Lynchburg	1870	*Dr. E. C. S. Taliaferro, Norfolk	1922
*Dr. R. S. Payne, Lynchburg	1871	*Dr. John Staige Davis, University	1923
*Dr. A. M. Fauntleroy, Staunton	1872	*Dr. W. W. Chaffin, Pulaski	1924
*Dr. Harvey Black, Blacksburg	1873	Dr. Hunter H. McGuire, Winchester	1925
*Dr. A. G. Tebault, London Bridge	1874	Dr. W. L. Harris, Norfolk	1926
*Dr. S. C. Gleaves, Wytheville	1875	Dr. J. Shelton Horsley, Richmond	1927
*Dr. F. D. Cunningham, Richmond	1876	Dr. J. W. Preston, Roanoke	1928
*Dr. J. L. Cabell, University	1877	Dr. J. Bolling Jones, Petersburg	1929
*Dr. J. H. Claiborne, Petersburg	1878	*Dr. Charles R. Grandy, Norfolk	1930
*Dr. L. S. Joynes, Richmond	1879	*Dr. J. Allison Hodges, Richmond	1931
*Dr. Henry Latham, Lynchburg	1880	Dr. I. C. Harrison, Danville	1932
*Dr. Hunter McGuire, Richmond	1881	*Dr. J. C. Flippin, University	1933
*Dr. G. W. Semple, Hampton	1882	Dr. R. D. Bates, Newtown	1934
*Dr. W. D. Cooper, Morrisville	1883	Dr. F. H. Smith, Abingdon	1935
*Dr. J. E. Chancellor, Charlottesville	1884	Dr. P. St. L. Moncure, Norfolk	1936
*Dr. S. K. Jackson, Norfolk	1885	Dr. J. M. Hutcheson, Richmond	1937
*Dr. Rawley W. Martin, Chatham	1886	Dr. G. F. Simpson, Purcellville	1938
*Dr. Bedford Brown, Alexandria	1887	Dr. A. F. Robertson, Jr., Staunton	1939
*Dr. Benjamin Blackford, Lynchburg	1888	Dr. H. H. Trout, Roanoke	1940
*Dr. E. W. Row, Orange C. H.	1889	Dr. W. B. Martin, Norfolk	1941
*Dr. Oscar Wiley, Salem	1890	Dr. Roshier W. Miller, Richmond	1942
*Dr. W. W. Parker, Richmond	1891	Dr. J. M. Emmett, Clifton Forge	1943
*Dr. H. Grey Latham, Lynchburg	1892	Dr. C. B. Bowyer, Stonega	1944
*Dr. Herbert M. Nash, Norfolk	1893	Dr. H. B. Mulholland, Charlottesville	1945
*Dr. Wm. P. McGuire, Winchester	1894		
*Dr. Robt. J. Preston, Abingdon	1895		
*Dr. Wm. L. Robinson, Danville	1896		

*Deceased.

†Owing to influenza epidemic during World War I, meeting not held in 1918, and Dr. Williams continued as President.

**PROCEEDINGS
MEDICAL SOCIETY OF VIRGINIA
ANNUAL MEETING
October 23, 24, 25, 1944
Richmond, Virginia**

SCIENTIFIC SESSIONS

Monday Evening, October 23

The first general session of the Medical Society of Virginia was held in the Virginia Room of the Hotel John Marshall, Richmond, on Monday, October 23, 1944, beginning at 8:50 p. m. Dr. Harvey B. Haag, of Richmond, General Chairman of the Committee on Arrangements, presided and called the meeting to order.

The invocation was said by the Reverend Father Robert E. O'Kane, of Richmond.

Dr. E. H. Terrell, President of the Richmond Academy of Medicine, extended greetings on behalf of the Richmond physicians; and Mr. Cecil S. Harris, a member of the City Council, substituting for the Honorable W. C. Herbert, Mayor of Richmond, made an address of welcome for the City.

Chairman Haag then presented the President of the Society, Dr. C. B. Bowyer, of Stonega, and Dr. Bowyer read his President's Address, entitled "Physicians, Wake Up."

Dr. J. Bolling Jones, of Petersburg, Chairman of the Membership Committee, was recognized at this time for the report of his committee. While the audience stood, Dr. Jones read the names of members of the Society who had died within the last year.

**Members Whose Deaths Have Been Reported
Since 1943 Meeting**

Dr. Griffin W. Holland, Eastville, October 23, 1943.
Dr. Franklin Davis Wilson, Norfolk, November 17, 1943.
Dr. Frederick Casper Rinker, Norfolk, November 15, 1943.
Dr. William O'Connor Cox, St. Paul, October 20, 1943.
Dr. William A. Smith, Madison, November 10, 1943.
Dr. Charles Ernest McNiel, Pennington Gap, October 26, 1943.
Dr. Jesse Green Storie, Grundy, October 20, 1943.
Dr. Vance Monroe Cox, Bristol, October 15, 1943.
Dr. Harry D. Howe, Hampton, December 27, 1943.
Dr. Coleman B. Ransone, Roanoke, December 3, 1943.
Dr. William Byrdwill Peters, Appalachia, January 9, 1944.
Dr. John Pugh Smallwood, Falls Church, January 4, 1944.
Dr. Oscar Ringold Quaintance, Slate Mills, January 3, 1944.
Dr. John S. Clark, Ivanhoe, September 25, 1943.
Dr. William Haynes Teeter, Bristol, October 1, 1943.
Dr. Dennie Marvin Thomasson, Lynchburg, February 18, 1944.
Dr. Arthur Grayson Vaden, Temperanceville, February 1, 1944.
Dr. William Mann Randolph, Charlottesville, January 25, 1944.
Dr. David Leighton Kinsolving, Abingdon, March 12, 1944.
Dr. Leigh Buckner, Roanoke, December 25, 1943.
Dr. Warren Taylor Vaughan, Richmond, April 2, 1944.
Dr. Samuel Broders Moore, Alexandria, March 15, 1944.
Dr. Robert Hunter Garthright, Vinton, May 2, 1944.
Dr. William Ward Seward, Surry, May 5, 1944.

Dr. George Simeon Fultz, Butterworth, May 16, 1944.
Dr. Robert Garnett Bledsoe, Locust Grove, February 2, 1944.

Dr. Jabez Peter Hankins, Orange, May 7, 1944.
Dr. Jabez Masten Harman, Floyd, June 3, 1944.
Dr. Richard Edward Albert, Portsmouth, May 30, 1944.
Dr. William A. Harris, Spotsylvania, May 25, 1944.
Dr. Fred Thomas Hauser, Purcellville, July 25, 1944.
Dr. James Reginald Bailey, Keysville, September 15, 1944.
Captain John Edward Fissel, Jr., Newport News.

PRESIDENT BOWYER: Ladies and gentlemen, I am delighted to have now the privilege of presenting to you the speaker of the evening, our Governor. We are proud of his records; we are proud of his accomplishments and proud of his growing career as a student of our present day medical problems. I am sure he will prescribe for us a good therapeutic dose for whatever he thinks ails us. I know he will give us a shot in the arm and will wake up some of you out there in the audience who went to sleep on me. I present Honorable Colgate W. Darden, Jr., Governor of Virginia.

Governor Darden spoke as follows:

I believe, as does the speaker who preceded me, that the problem of medical care can better be handled by the medical profession itself than by the State. I do not think there is any comparison, as a matter of fact, between the capacity of the two groups to deal with it.

One thing can, I think, be said of the years which followed World War I. During the period, the individual has been in retreat from responsibility. That retreat has been made with a cry to the State to take the place in assuming the obligations which should rest upon the individual himself. We have seen for many years the desire to spend without the desire to tax, not only here but abroad.

We have, in this program for medical care, a large number of suggestions for the meeting of the problem. Practically all of them deal with how to do it and not how to pay for it. We shall learn one of these days that neither individuals nor societies are remade over night and that everything done must be paid for. There is no such thing as free-wheeling indefinitely. Men have struggled from the dawn of civilization to evolve some scheme whereby they could have what they want without working for it, and to this hour no individual has stepped to the fore with a plan that will work. The impact of the experiment has been deferred sometimes for a number of years, but the result has always been the same. No man can wear a pair of shoes until they have been made. No man can wear a suit of clothes until it is manufactured. We cannot enjoy the labors of others without giving of ours in return.

If the doctors of the United States cannot evolve a plan that is workable, I doubt that those of us who are in political life can do it. I do not believe those of us who hold political office are any more interested in the welfare of the rank and file of the people than are you. In so far as Virginia is concerned, I want to say that whatever plan is worked out will be attempted by the State authorities hand in hand with the Medical Society of the State, because I believe the doctors should have a hand in the medical program.

I know that among the doctors, as amongst all of us, there are some who are too conservative and some who are too radical. But there must be enough of them who stand on middle ground to enable us to work out a wise solution of our problem. This may not be world revolution through which we are living, but no person can deny that vast changes are under way. Many of them are needed. Many of them represent the need of the individual to adjust himself to new conditions. We have had to do a great many things in Virginia since the coming of the automobile. Among other things we invested over \$600,000,000 in highways. The advent of the automobile has put in business a vast number of people. We have readjusted our lives on account of it. One of the problems in the rural communities, the disappearance of doctors from those communities, arises out of good roads and automobiles. People are inclined to want to trade in the towns. Doctors are inclined to want to live in the towns. Living is more comfortable there, and there are better facilities. They, like the rest of us, must provide for their families, and the opportunities presented in urban areas seem better.

Many communities in Virginia are without medical service. I feel sure that when the money is available there will be an attempt to furnish medical service to them. I do not want to see a scheme developed in Virginia whereby people cannot choose their own doctors. I cannot think of a greater tragedy. Speaking as an individual, I do not want to see the day come when I am not free to go to see the doctor I like and with whom I can gossip. That is part of the treatment, certainly, for the patient.

We are going to have increased agitation for plans both sound and unsound. The agitation is not going to succeed unless we fail to develop a plan that is sound and acceptable to the people as a whole. We ought to fail unless we do this. If we go ahead with a reasonable program I think it will succeed so far as this State is concerned. If we do not, I think a much more radical plan will be evolved by the Government. But those of us in political life must have your help in organizing a sound program. We look to you for leadership in this field. With your help we believe that we can devise for Virginia an apparatus that is workable and within the means of the people. It is not going to be in your power to evolve a plan to take care of the indigent. That must be done by tax money. But that group is a small group. What we must concern ourselves with is the great middle group, who are not able at present to supply themselves with medical care. We must furnish them means for collective action.

Just one more thing. I think there ought to be a program developed that would permit us to check every school child in Virginia. I thought some time ago it ought to be done once a year, and I sent over to Dr. Riggin and asked him to develop a plan for me and tell me the cost. I was astounded when he sent me a plan for examining the school children of this State not once a year but three times during public school attendance, at the modest sum of \$3,000,000 a year. Notwithstanding this heavy cost, which can, I think, be much reduced, we ought to make arrangements to check the health of the children in our school system. I do not think that the State should provide medical care. After examination, a note should be sent the parents, who in turn can get in touch with the family doctor. This will accomplish what we desire.

That will do far more than merely giving us a check on the health of the school children in Virginia. It is going to create in them faith in medical advice and will probably lead them to consult you more often.

I remember that at the outbreak of the World War there was hostility to the Government's plan of insurance, because it was thought it would ruin the insurance companies. But after the war there was a greater

demand for insurance than ever before, because of the experience with it during the war. So I think this will create a greater demand for medical service, from individuals.

The State should expand its public health service. We cannot get doctors and cannot get nurses now, but as soon as the war is over I think we can get skilled help.

I shall be very glad if you can suggest a plan looking to the broadening of medical care. I certainly hope that before I leave office, in another year, I can send to the legislature a message that will cover or begin to cover a plan for taking care of the indigents of Virginia. This is a problem that rests on us all. There is no reason why the medical profession should be charged with this responsibility any more than the lawyers should. It is a burden for us all.

I hope that you will have a pleasant meeting here in Richmond. If there is anything the State Government can do for you, please call on us. I have enjoyed being here with you and hope that your meeting will be very successful.

PRESIDENT BOWYER: I know you have all been glad to hear our Governor's message. He has given us something to think about. We thank you, Governor Darden, for coming here to address us.

The program for the evening has now been completed, and the Society will adjourn until tomorrow morning at nine-thirty.

(Thereupon the first general session adjourned.)

Morning Session Tuesday, October 24

The Medical Society of Virginia met in the Virginia Room of the Hotel John Marshall on Tuesday morning, October 24, for its first scientific session and was called to order by Dr. John O. Boyd, of Roanoke, Vice-President, at 9:50 o'clock.

The paper of Dr. Frank S. Johns and Dr. James B. Stone of Richmond, on "Congenital Pyloric Stenosis", was read by Dr. Johns and was discussed by Drs. W. Lowndes Peple and James B. Stone, of Richmond, Dr. E. A. Harper, of Lynchburg, Dr. W. C. Kappes, Huntington, West Virginia, Dr. Hugh H. Trout, Roanoke, and by Dr. Johns in closing.

Dr. Leroy Smith, of Richmond, then showed Dr. Guy Horsley's moving picture on pyloric stenosis.

Dr. James Q. Gant, Jr., Surgeon (R), United States Public Health Service, read his paper entitled "Dermatitis in the American Munitions Industry" (illustrated by lantern slides). This was discussed by Dr. Thomas W. Murrell, Richmond, Capt. Toson O. Summers, M. C., U. S. N., Senior Medical Officer, U. S. Naval Mine Depot, Yorktown, Lt. Comdr. T. E. Cone, M. C., U. S. N. R., U. S. Naval Mine Depot, Yorktown, and by the author in closing.

Dr. Alexis F. Hartmann, St. Louis, Missouri (invited guest), was introduced by the chairman and addressed the Society on the subject of "Further Clinical Studies in Disturbances of Acid-Base Balance".

The paper of Dr. Challis H. Dawson, Suffolk, and Dr. Hubert D. Crow, Courtland, entitled "Report of Five Cases of Meningitis Treated Empirically with Sulfanilamide under Rural and Low Economic Conditions",

was read by Dr. Dawson and was discussed by Dr. McLemore Birdsong, University, and Dr. H. O. Bell, Belleville, New Jersey, and by Dr. Dawson in closing.

The paper entitled "Non-Surgical Therapy of Epilepsy", by Drs. Hugh Page Newbill and Randolph Leigh, Jr., of University, was read by Dr. Newbill. This was discussed by Dr. John M. Meredith, Richmond, Dr. David C. Wilson, University, Dr. Basil B. Jones, Richmond, and in closing by Dr. Newbill.

Dr. Fred E. Hamlin, Roanoke, read his paper entitled "An Investigation of Allergy in Routine Nose and Throat Practice: A Report of One Hundred Private Cases", which was discussed by Dr. W. Randolph Graham, Richmond, and by Dr. Hamlin in closing.

The morning session then adjourned, at 1:45 p. m.

Afternoon Session Tuesday, October 24

On Tuesday afternoon, October 24, a Symposium on Nutrition was presented in the Egyptian Building of the Medical College of Virginia, sponsored by the Medical College of Virginia. Dr. C. B. Bowyer, President of the Society, called the meeting to order at three o'clock and then asked Dr. William H. Higgins, Chairman of the Symposium, to preside and to introduce the speakers.

After brief introductory remarks by Chairman Higgins, the speakers were presented by him and read their papers as follows:

Colonel John B. Youmans, Director of Nutrition Division, Army Service Forces, Office of Surgeon General, Washington, D. C., "Introductory Outline of Symposium".

Dr. William B. Porter, Professor of Medicine, Medical College of Virginia, Richmond, "Nutrition in Relation to Medicine".

Dr. Everett Idris Evans, Associate Professor of Surgery, Medical College of Virginia, Richmond, "Nutrition in Relation to Surgery" (illustrated by lantern slides).

Dr. Lee E. Sutton, Jr., Professor of Pediatrics, Medical College of Virginia, Richmond, "Nutrition in Relation to Pediatrics".

Dr. I. C. Riggan, State Health Commissioner of Virginia, Richmond, "Nutrition in Preventive and Industrial Medicine".

Colonel Youmans, "Summary of Objectives in Nutrition".

Chairman Higgins, in behalf of the members of the Society, expressed their thanks to Colonel Youmans for his contribution to the program. The afternoon session then adjourned.

Morning Session Wednesday, October 25

The closing general session of the Medical Society of Virginia was held on Wednesday morning, October 25, in the Virginia Room of the Hotel John Marshall, beginning at ten o'clock. The President, Dr. C. B. Bowyer, presided.

The paper of Drs. George Cooper, Jr., and Vincent W. Archer, of University, on "Radiation and Neurosurgery

in Advanced Painful Malignancy", was read by Dr. Cooper and was discussed by Dr. John M. Meredith, Richmond, and in closing by Dr. Cooper.

Dr. Paul Hogg, Newport News, read his paper entitled "Erythroblastosis and the R_h Factor" (brought over from Tuesday's program). Dr. T. C. Lawford, of Hilton Village, then read the prepared discussion of Dr. Harvey Bland, of Newport News, who was unable to be present at this session.

Dr. Herbert C. Lee of Richmond read his paper entitled "Partial Duodenopancreatectomy: Its Use in the Treatment of Pancreatic Malignancy". This was discussed by Dr. Carrington Williams and Dr. J. Shelton Horsley, both of Richmond, and by Dr. C. Lydon Harrell, of Norfolk, and in closing by the author.

President Bowyer at this time introduced Dr. Wallace E. Herrell (guest speaker), Consultant in Medicine, Mayo Clinic and Assistant Professor of Medicine, Mayo Foundation Graduate School, University of Minnesota, Rochester, Minnesota. Dr. Herrell addressed the Society on the subject of "Penicillin", illustrating his talk with lantern slides. This was discussed by Dr. E. E. Barksdale, U. S. Naval Hospital, Bethesda, Maryland, Dr. Richard Mason, The Plains, and others.

Dr. Paul D. Camp, Richmond, read his paper entitled "Congenital Heart Disease: A Presentation of Cases Illustrating some of the More Common Types", which was discussed by Dr. Dean B. Cole, of Richmond. (No closing discussion.)

PRESIDENT BOWYER: Gentlemen, in stepping out as your president I have reached another milestone. I may say that I am glad to have gotten this far without a wreck.

I want to thank you for the support of the officers, the councilors, the committees, and the local societies. I also want to thank you for the part you have played in making this meeting successful. I am well pleased with it.

I also wish to extend my thanks to the local committee on arrangements, the guest speakers, to those responsible for furnishing the scientific and technical exhibits, and the delegates from our sister states and from the Pharmaceutical Association and the Dental Association of this State. We are grateful to the management and employees of the hotel for the service they have given us, and I could not close without voicing my appreciation to Miss Edwards for the assistance she has so willingly rendered.

If Dr. D. C. Smith will now bring forward Dr. Mulholland, I will turn over the gavel without any eulogy. Dr. Mulholland has been here, and you know what he can do. In giving him this gavel I ask only that during this year he will solve all of our difficult problems, so we shall have nothing in the future to fear.

PRESIDENT H. B. MULHOLLAND, University: Mr. President, ladies, and gentlemen, I deeply appreciate the signal honor that the Society has conferred upon me in electing me to the office of president. I can only say that I will try to follow in the path of my illustrious predecessors.

I also want to say that I am aware of the tremendous responsibility this office carries with it. We are at the threshold of many changes in medicine, I am sure. I am glad that the members of our Society are conscious of the many social adjustments that are occurring in the world, in that they have recently approved an experimental plan for securing medical care. There remains, however, the important problem of rural medical care, which is quite pressing. I feel sure we shall have State aid in handling this problem. A legislative committee has been set up to study this.

Our retiring president mentioned the fact that we must look after our returning men, those who are now in the Army and the Navy. I have recently had a three-and-one-half-page single-spaced typewritten letter from one of my medical friends who is now in Italy, and that letter embodied the thoughts of every member of his evacuation unit. These men want to know what is going to be done for them after the war. They do not want to be "the forgotten men." Doctors were, after the last war. So I think it is most important to take cognizance of this problem. We have a Committee on Clinical and Medical Education on which there are representatives from the two medical schools, the Department of Health and practicing physicians. I think that Committee might well develop a plan not only for the further education of these men but to help them in finding suitable locations for practice.

I should like now to announce the standing committees.

Standing Committees

(The numbers after names indicate length of term of office, as the By-Laws provide that new members of STANDING COMMITTEES shall be named by the in-coming President for terms of three years, except in the case of the Department of Clinical and Medical Education.)

PUBLICATION AND PROGRAM: M. P. Rucker, M.D. (1), Richmond, *Chairman*; Wyndham B. Blanton, M.D. (2), Richmond; J. Edwin Wood, Jr., M.D. (3), Charlottesville.

SCIENTIFIC EXHIBITS AND CLINICS: W. Ambrose McGee, M.D. (3), Richmond, *Chairman*; M. L. Dreyfuss, M.D. (1), Clifton Forge; McLemore Birdsong, M.D., (2), Charlottesville.

DEPARTMENT OF CLINICAL AND MEDICAL EDUCATION: C. B. Bowyer, M.D., Stonega, *Chairman*; George B. Zehmer, Charlottesville, *Executive Secretary*; I. C. Riggins, M.D., Richmond, *State Health Commissioner*; J. P. Gray, M.D., Richmond, Medical College of Virginia; Edwin P. Lehman, M.D., Charlottesville, University of Virginia; P. St. L. Moncure, M.D., Norfolk; H. S. Daniel, M.D., Louisa.

LEGISLATION: W. C. Caudill, M.D. (2), Pearisburg, *Chairman*; J. W. Preston, M.D. (2), Roanoke; W. L. Peple, M.D. (2), Richmond; F. S. Johns, M.D. (1), Richmond; G. Colbert Tyler, M.D. (1), Newport News; J. Morrison Hutcheson, M.D. (1), Richmond; Dean B. Cole, M.D. (3), Richmond; W. A. Porter, M.D. (3), Hillsville; Alex. F. Robertson, Jr., M.D. (3), Staunton.

MEDICAL ECONOMICS: Guy Fisher, M.D. (3), Staunton, *Chairman*; N. G. Wilson, M.D. (3), Norfolk; W. L. Powell, M.D. (2), Roanoke; A. B. Graybeal, M.D. (2), Marion; C. L. Harshbarger, M.D. (1), Norton; H. A. Latane, M.D. (1), Alexandria.

MEMBERSHIP: A. M. Showalter, M.D. (2), Christiansburg, *Chairman*; J. Bolling Jones, M.D. (1), Petersburg; J. F. Thaxton, M.D. (3), Tye River.

ETHICS: J. L. Hamner, M.D. (3), Mannboro, *Chairman*; R. L. Raiford, M.D. (1), Franklin; H. W. Bachman, M.D. (2), Bristol.

JUDICIAL: P. S. Smith, M.D. (2), Abingdon, *Chairman*; John O. Boyd, M.D. (1), Roanoke; J. M. Hutcheson, M.D. (3), Richmond.

Thank you very much.

If there is nothing further to come up, the Society will now adjourn.

(Whereupon, at 1:25 o'clock p. m., Wednesday, October 25, 1944, the meeting adjourned *sine die*.)

Special Committees

Following the meeting, Dr. Mulholland appointed the following SPECIAL COMMITTEES:

PUBLIC RELATIONS AND MEDICAL SERVICE: J. M. Emmett, M.D., Clifton Forge, *Chairman*; H. B. Mulholland, M.D., Charlottesville; I. C. Riggins, M.D., Richmond.

CHILD WELFARE: P. W. Miles, M.D., Danville, *Chairman*; R. H. DuBose, M.D., Roanoke; Emily Gardner, M.D., Richmond; R. B. Hightower, M.D., Alexandria; Mary E. Johnston, M.D., Tazewell; E. C. Harper, M.D., Richmond; W. T. Graham, M.D., Richmond.

MATERNAL HEALTH: C. J. Andrews, M.D., Norfolk, *Chairman*; A. L. Carson, M.D., Richmond; Waverly Payne, M.D., Newport News; F. O. Plunkett, M.D., Lynchburg; J. M. Nokes, M.D., Charlottesville; J. M. Whitfield, M.D., Richmond; G. N. Carter, M.D., Boydton; D. S. Divers, M.D., Pulaski; M. P. Rucker, M.D., Richmond.

WALTER REED COMMISSION: C. P. Jones, M.D., Newport News, *Chairman*; J. D. Clements, M.D., Ordinary; James W. Smith, M.D., Hayes Store.

TO CONFER WITH STATE BOARD OF NURSE EXAMINERS: I. A. Bigger, M.D., Richmond, *Chairman*; C. B. Morton, M.D., Charlottesville; D. S. Divers, M.D., Pulaski; A. P. Jones, M.D., Roanoke; D. G. Chapman, M.D., Richmond; Russell Buxton, M.D., Newport News.

SYPHILIS CONTROL: W. W. S. Butler, M.D., Roanoke, *Chairman*; J. W. Love, M.D., Alexandria; D. C. Smith, M.D., Charlottesville; J. R. Blalock, M.D., Marion; R. W. Fowlkes, M.D., Richmond; W. E. Baker, M.D., Richmond.

TUBERCULOSIS: Frank Stafford, M.D., Charlottesville, *Chairman*; C. L. Harrell, M.D., Norfolk; C. W. Scott, M.D., Burkeville.

MENTAL HYGIENE: O. B. Darden, M.D., Richmond, *Chairman*; D. C. Wilson, M.D., Charlottesville; C. F. Graham, M.D., Wytheville; R. F. Gayle, M.D., Richmond; J. E. Barrett, M.D., Williamsburg.

CANCER: E. P. Lehman, M.D., Charlottesville, *Chair-*

man; George Cooper, M.D., Charlottesville, *Vice-Chairman*; I. C. Riggins, M.D., Richmond; R. L. Payne, M.D., Norfolk; Fred Hodges, M.D., Richmond; R. P. Bell, M.D., Staunton; Hugh H. Trout, M.D., Roanoke; I. A. Bigger, M.D., Richmond; A. B. Gathright, Jr., M.D., Richmond.

INDUSTRIAL HEALTH: J. B. Porterfield, M.D., Richmond, *Chairman*; W. L. Weaver, M.D., Richmond; W. B. Barton, M.D., Stonega; H. U. Stephenson, M.D., Richmond; Alexander McCausland, M.D., Radford; G. H. Kinser, M.D., Waynesboro.

MEDICAL EXAMINER SYSTEM: Wyndham B. Blanton, M.D., Richmond, *Chairman*; M. B. Beecroft, M.D., Newport News; Kenneth D. Graves, M.D., Roanoke; J. Edwin Wood, Jr., M.D., Charlottesville; E. G. Scott, M.D., Lynchburg; J. H. Scherer, M.D., Richmond; W. D. Kendig, M.D., Kenbridge; G. B. Setzler, M.D., Pennington Gap; G. C. Williams, M.D., Pearisburg; W. O. Bailey, M.D., Leesburg.

NUTRITION: Raymond Kimbrough, M.D., Norfolk, *Chairman*; J. P. Gray, M.D., Richmond; W. W. Waddell, Jr., M.D., Charlottesville; E. A. Harper, M.D., Lynchburg; A. L. Carson, Jr., M.D., Richmond; N. F. Rodman, M.D., Norfolk.

REHABILITATION: Wm. B. Porter, M.D., Richmond, *Chairman*; J. M. Emmett, M.D., Clifton Forge; I. C. Riggins, M.D., Richmond; H. B. Mulholland, M.D., Charlottesville; T. Dewey Davis, M.D., Richmond.

ADVISORY TO WOMAN'S AUXILIARY: W. L. Harris, M.D., Norfolk, *Chairman*; J. L. DeCormis, M.D., Accomac; D. C. Wilson, M.D., Charlottesville.

BUSINESS SESSIONS Council

October 23, 1944

The annual meeting of the Council was held at the John Marshall Hotel, Richmond, on October 23 at 9:30 A. M., with the President, Dr. C. B. Bowyer, presiding. Others in attendance were: Dr. H. B. Mulholland, President-Elect; Dr. N. G. Wilson, Vice-President; Drs. F. C. Pratt, Julian L. Rawls, W. B. Porter, J. L. Hamner, W. C. Akers, J. J. Giesen, A. F. Robertson, Jr., Percy Harris, and F. H. Smith, Councilors; Dr. M. P. Rucker, Editor of the VIRGINIA MEDICAL MONTHLY; Dr. I. C. Riggins, State Health Commissioner; Dr. J. M. Emmett, Chairman of the Committee on Public Relations and Medical Service; Dr. Hugh H. Trout, Chairman of Procurement and Assignment of Physicians; and Dr. Wyndham Blanton, Chairman of the Committee to Study the Coroner Situation.

The minutes of the January meeting were adopted as published in the March, 1944, issue of the MONTHLY.

Upon request, Dr. Rawls presented the budget as prepared by him and Dr. Porter. He called attention to a few minor changes on account of increase in cost of postage, etc. Not included in the budget, he stated, was a gift of \$400.00 to Miss Edwards and \$200.00 to Miss Watkins in appreciation of their services, as it was not deemed feasible to increase salaries at this time. The budget as presented was then approved, as also the gifts.

Budget

October 1, 1944—September 30, 1945

MEDICAL SOCIETY OF VIRGINIA

Salaries	\$2,880.00
Rent and Phone	375.00
Stationery and Office Supplies	75.00
Repairs and Replacements	40.00
Postage	225.00
Audit Fee	30.00
Social Security Tax (½)	30.00
Miscellaneous	25.00
President's Expense	100.00
President-Elect Expense	50.00
Councilors' and Officer's Expense	75.00
Delegates to A.M.A.	150.00
Convention Expenses	600.00
Scientific Exhibits	350.00
Department Clinical and Medical Education	600.00
Walter Reed Commission	75.00
Child Welfare	10.00
Maternal Health	20.00
Cancer Control	20.00
Industrial Health	20.00
	<hr/>
	\$5,850.00

VIRGINIA MEDICAL MONTHLY

Salaries	\$2,880.00
Preparation of Journal	7,500.00
Rent and Phone	375.00
Stationery and Office Supplies	35.00
Repairs and Replacements	40.00
Office Postage	55.00
Audit Fee	30.00
Miscellaneous	20.00
Social Security Tax (½)	30.00
	<hr/>
	\$10,965.00

Dr. Rawls said that one matter which comes up for consideration this year is the renewal or discontinuance of the additional \$2.00 on dues, which was added to cover the work of the Legislative Committee. There is now in this special fund a balance of \$9,233.40 and as the coming year is not a legislative one, the budget committee felt, with the balance on hand, that an additional \$1.00 should take care of this work and recommended that the \$2.00 increase be cut to \$1.00. Dr. Smith asked if any of this fund could be used to prosecute illegal practitioners, and it was stated that this was the original plan in building up the fund. Dr. Robertson asked if the new medical practice act would not do away with these prosecutions. Dr. Smith said it would rather increase them, he thought, for the present. Dr. Mulholland felt that, due to the uncertainty of the situation, the \$2.00 should be continued, and Dr. Akers moved that this be left as it is and label this balance to cover also the prosecution of illegal practitioners. Seconded. Dr. Mulholland made motion that dues be continued as at present. Seconded and carried.

The budget committee also suggested that it might stimulate interest among the younger doctors if the journal would allow \$15.00 to \$20.00 for cuts in any one article,

and Dr. Rawls moved that authors be allowed \$15.00 at present and if circumstances justify, make this amount \$20.00 at a later date. This is to be left to the discretion of the publication committee. Seconded and carried.

Dr. Emmett, chairman of the Public Relations and Medical Service Committee, stated he had no report to make other than the one which had been published.

A letter from Dr. E. P. Tompkins of Lexington was read calling attention to the fact that the highway had been changed so that the marker placed by the Society some years ago, indicating the birthplace of Ephraim McDowell, was no longer where it could be seen and was overgrown with vines. He suggested that something be done with regard to having this moved to the highway. It was felt that the State Highway Department would move the marker without cost to the Society, and the secretary was instructed to take this matter up with them.

In reports from Councilors, Dr. Hamner stated that a resolution had been passed by the Fourth District and Southside Virginia Association asking that a section on general practice be established at the meetings. Dr. Wilson said that some years ago the general practitioners of the Society had met and after discussion decided not to ask for a change in the regular form of the program. It was also stated that the Society at one time had sections on medicine and surgery but they were discontinued because one year there were only seven members at one section. Dr. Smith moved that this matter be referred to the House of Delegates. Seconded. After discussion, however, he amended his motion and moved that one section of the program be set aside for the general practitioner. Seconded and carried.

Under new business, Dr. Robertson gave the history of the Medical Service Plan of Associated Doctors of Virginia. Last summer representatives of hospitals serving sixty-seven counties of Virginia and of the Richmond Hospital Association were invited as guests of the Railroad Clinic to a meeting in the interest of making state-wide plans for medical service. As a result, the organization was formed. It was felt that the medical profession has talked about the evils of state medicine but has made little effort to put forth anything to take its place. It was decided that the organization should become effective as soon as possible, and the Association wishes the endorsement of the Medical Society of Virginia. The plan is for a non-profit, non-stock company, which would furnish certain medical services more or less as a rider to the already existing hospital plan in force, including surgical, obstetrical and some x-ray fees.

Dr. Rucker stated that this idea probably originated with the late Dr. Joseph Geisinger of Richmond who suggested a plan to help people in the low income group pay their medical bills. A plan is now operating in eight to ten states. The Virginia plan as now suggested covers only the surgical and obstetrical fee and certain x-rays but it is hoped to be able to enlarge it to cover medical care in hospitals. There is a marked increase in public demand for this sort of thing and unless the Society does

something about it the public will take it in its own hands.

Dr. Smith said they had a similar plan in operation in southwest Virginia and asked what effect the suggested plan would have on their organization. It was stated that the plan would not attempt to go into a territory where they have sufficient coverage.

Dr. Porter thought it would be necessary to send full information to all members of the profession in Virginia so that the medical men will not think that it is just a group of surgeons trying to get their fees. Doctors will have to be educated as well as the public.

Dr. Mulholland moved that the Council approve the plan in principle. Seconded and carried.

Dr. Blanton, chairman of the committee to study the coronor situation, stated that the report of his committee was published in the October MONTHLY. However, he requested \$500.00 for the work of his committee. Dr. Smith moved that any amount necessary up to \$500.00 be allowed this committee from the legislative committee fund. Seconded and carried.

It being reported that the Cancer Committee would ask for \$100.00 for this year for the purpose of publishing a bulletin, in addition to the allowance for stationery and postage, it was moved that this be granted, contingent upon an official request from the committee to the House of Delegates. Seconded and carried.

There being no further business, the Council adjourned.

House of Delegates

October 23, 1944

The first meeting of the House of Delegates was called to order by the president, Dr. C. B. Bowyer, at 11 o'clock on October 23 in the John Marshall Hotel.

Roll call showed a quorum present.

The minutes of the last meeting were approved as published in the December, 1943, issue of the VIRGINIA MEDICAL MONTHLY.

Dr. Rawls, chairman, then presented the report of the Finance Committee, as approved by the Council, with the recommendation that the dues be continued as \$7.00 annually, the additional \$2.00 being used for the legislative fund. This was accepted.

Committee reports (published in October, 1944, issue of the VIRGINIA MEDICAL MONTHLY) were considered:

Delegates to the American Medical Association (pages 525-6). Dr. Hutcheson stated that nothing had been done with regard to exemption from Selective Service of medical students since his report had been written. He also called especial attention to the reference to prepayment medical service. The report was accepted.

Publication and Program (page 526). Accepted.

Scientific Exhibits (page 526). Accepted.

Department of Clinical and Medical Education (pages 526-7). Accepted.

Legislation (pages 527-8). A rising vote of thanks was given Dr. Caudill and the members of his committee for the work they have done and what they have accomplished. The report was adopted.

Medical Economics (page 528). Accepted.

Ethics (page 529). Accepted.

Judicial (page 529). Accepted.

Membership (page 529). Dr. A. M. Showalter moved the adoption of this report with reference to honorary membership for Dr. Bowyer. Seconded and carried.

Public Relations and Medical Service (pages 529-30). Dr. Emmett said this called for the reading of resolutions from the Chicago Medical Society but this was now unnecessary. Report accepted.

Maternal Health (page 530). Accepted.

Child Welfare (pages 530-1). Accepted.

Walter Reed Commission (page 531). Accepted.

Tuberculosis (pages 531-2). Dr. C. L. Harrell, a member of the Committee, said that in recent months the sanatoria are only able to accept those patients who can wait on themselves and walk to their meals. Dr. J. E. Payne stated that there were 252 cases of active pulmonary tuberculosis untreated in Arlington County today. Dr. E. C. Harper said that the State Health Department is fully aware of the fact that there are empty beds in the State Sanatoria, but it is absolutely impossible for the management to get sufficient help to take care of bed-ridden patients and they have had to discontinue admitting them. When sufficient help can be secured, they will be glad to fill every bed. Dr. Mulholland asked if they could get the help if they have sufficient money. If that is the case this body should go on record as disapproving this condition and allowing the institutions more money. It was said that domestic help is causing the trouble, because they can't be paid more as it would put them in a different classification of wage scales. Dr. Porter felt there should be some distinction between hospitals and industrial factories, as hospitals cannot compete with other salaries unless some distinction is made. Dr. Emmett felt the committee should confer with the State Health Department, but Dr. Mulholland said the State Health Department faces the same problem. Dr. Payne moved that the fact beds are not available be brought to the attention of the proper authorities. Dr. Porter offered a substitute motion that this matter be referred to the Legislative Committee to bring in a recommendation to this body. Dr. Caudill, chairman of the Legislative Committee, did not see what could be done about this now because there is a law under which the personnel is being operated, and it would take legislative action to change it. If this body goes on record as endorsing a change in order that hospitals might not be placed in the same class as other organizations, then this could be brought up at the next legislative. Dr. Rodman offered a substitute motion that the matter be referred back to the tuberculosis committee for their recommendation which should be made to the Council, the Council having the authority to take it up with the Governor, Legislature, or do whatever they think best. Seconded and carried. The report was then accepted with this motion.

Syphilis Control (pages 532-3). Accepted.

To Study Coroner Situation (page 533). Dr. Blanton, chairman, stated that this committee is wrongly

named and should be the Committee on a Medical Examiner System. He said that in accepting the report the members were approving what has been and will be done and are making it a continuous committee. It was moved that the report be adopted. Seconded. Dr. A. A. Burke stated that there has been some opposition to the proposed system. In Norfolk the present coroner cannot grant an autopsy unless the Commonwealth's Attorney is willing to allow it. He would like for the Society to go on record as appointing three men in each county to say when an autopsy should be performed and not to allow the Commonwealth's Attorney to have so much authority. Dr. Rodman felt that the present coroners will have to be convinced that this will not take away their jobs. Dr. Knight stated that he thought it a reflection on the coroner that he should have a higher man say what he should do. Dr. Musgrave said that in Loudoun County there has never been a time when they could not get an autopsy, as the coroner has the last say-so. Dr. Showalter stated that it was his understanding when this committee brought in its recommendations it would take care of some of these difficulties. He has been coroner in his county for twenty years and if any coroner performs an autopsy without the permission of the Commonwealth's Attorney he is violating the law. He approved the bill as presented in Roanoke last year. Dr. Emmett felt there was a misunderstanding on the contents of this bill, and it is one of the most progressive steps the Society has ever taken. Dr. Blanton stated that it is not the idea to remove the coroner but to leave him where he is, and have someone advise with him. This bill does not leave this matter in the hands of the Commonwealth's Attorney. Dr. Rodman asked if the proposed bill in any way reduces the compensation provided for the coroner, to which Dr. Blanton replied it doubled the compensation. A rising vote was taken and the motion to adopt the report was carried.

Cancer Committee (page 534). Dr. George Cooper, acting chairman, presented the following supplementary report, which was adopted:

Supplemental Report of Cancer Committee

Your Committee met October 22, to review the reports of cases treated at the expense of the Virginia Cancer Foundation in the tumor clinics certificated by the Committee. Continuance of certification is dependent on the maintenance of the standards of treatment satisfactory to the Committee. Certification of all clinics was continued.

Due to the death of Dr. Wright Clarkson, it was voted that Dr. Edith I. Miller be asked to accept Directorship of the Petersburg Cancer Clinic.

The Committee was of the unanimous opinion that it should initiate a program to bring the cancer problem before the physicians of the state, to keep the doctors cancer conscious, informed of both sources of error in cancer diagnosis and new methods of diagnosis and treatment. As the first step in such a program, the Committee wants to issue bulletins on cancer as inclosures to the VIRGINIA MEDICAL MONTHLY. Each bulletin will consist of a single sheet printed on colored paper to attract attention and loose leaf so that it can be filed separately. Copies of the bulletin will be mailed to the secretary of

the Old Dominion Medical Society for distribution to its members at the expense of that Society. Around eighteen hundred copies will be needed for the members of the Medical Society of Virginia and one hundred seventy-five for the members of the Old Dominion Medical Society. Five hundred additional copies should be kept on file in case of requests for extra copies, for exchange with other groups issuing similar material, and for the doctors now in Service, should they desire back copies on their return.

The total cost of each issue will run around \$12.50 to \$15, depending on the amount of type, spacing, etc., of the individual bulletin. The Committee believes six bulletins should be issued in 1945, and therefore requests that it be granted \$100 for this purpose.

GEORGE COOPER, JR.,
Acting Chairman.

Industrial Health (page 534). Accepted.

State Board of Nurse Examiners (page 534). Accepted.

Advisory Board to Woman's Auxiliary (page 534). The following report from Mrs. Clyde West, President of the Auxiliary, was read and both reports were accepted:

Report on Activity of Woman's Auxiliary to the Medical Society of Virginia

As President of the Woman's Auxiliary, it is my pleasure to present to the President of the Medical Society of Virginia a very gratifying report of our activities.

Individual reports show every County Chapter in the State taking a full part in the many phases of War Work—the thing uppermost in our minds today. We are represented in each branch of the Red Cross—Nurses Aides, Gray Ladies, Work Rooms, Canteens, Blood Donors, Motor Corps, U.S.O. hostesses, Recreation Centers, and Navy League House, selling and buying War Bonds and Stamps, and taking part in War Fund Drives.

Complying with request of the Society, we have formed a Committee to study medical care plans.

Our ever-increasing interest in Cancer Control work advances. County Chapter reports show renewed interest and activity in this subject.

We can well be proud of the contribution each County Auxiliary makes to its respective Hospitals.

The social side of our Auxiliary life has become a minor thing to all of our members and they have stepped forward, shoulder to shoulder, to help clear the Way for a Better World.

EUNICE A. WEST,
(MRS. W. CLYDE WEST),
President.

Mental Hygiene (page 534). Accepted.

Committee for Procurement and Assignment of Nursing Service (page 534). Accepted.

Rehabilitation (page 534). Accepted.

Nutrition. Dr. Kimbrough, chairman, stated that this Committee had had one meeting. They have also worked with the Committee on Industrial Health in putting on a program.

As this completed the business for the morning session, Dr. Bowyer asked the various districts to get together after adjournment and select their members of the Nominating Committee so time would not be taken up by this at the afternoon session. The House then adjourned to meet again at 3:00 P. M.

3:00 P. M.

There being a quorum present, the roll call was dispensed with and the first order of business was the naming of the Nominating Committee as follows:

- 1st District—Dr. E. T. Ames.
- 2nd District—Dr. A. A. Burke.
- 3rd District—Dr. E. H. Terrell.
- 4th District—Dr. G. M. Naff.
- 5th District—Dr. W. A. Porter.
- 6th District—Dr. F. A. Farmer.
- 7th District—Dr. Guy Fisher.
- 8th District—Dr. D. C. Wilson.
- 9th District—Dr. F. H. Smith.

Dr. Bowyer then announced that the Nominating Committee would also have to recommend three men from which the Governor might select one to fill the vacancy on the State Board of Medical Examiners for the 6th District, as Dr. Preston's present appointment will expire this year. However, Dr. Preston is eligible to succeed himself.

Under new business, Dr. Robertson then read the plan of pre-payment for medical service as recommended by the Associated Doctors of Virginia, as follows:

Medical Service Plan Associated Doctors of Virginia

In 1939 this House of Delegates approved the principle of prepayment for medical services. Since that time non-profit hospital service plans have been put into effect in Virginia, largely through the agency of the Blue Cross Plans.

All of us who have been interested in medical economies have felt that if voluntary prepayment for unpredictable, or so-called catastrophic illnesses could be generally adopted, the argument for socialized medicine would be in a large measure neutralized. The addition of prepaid medical services, while in the hospital, to the already existing hospital service plans would provide the means by which those in the lower income groups would be able to obtain adequate medical care in most circumstances.

In August, 1944, representatives of hospitals serving sixty-seven counties in Virginia, and of the Richmond Hospital Service Association, attended a conference as guests of the Raiford Clinic Staff. As a result of the interest shown at this and at other meetings a plan was worked out with legal and actuarial assistance. This plan is to be administered by an association of doctors participating in the plan and known as the Associated Doctors of Virginia. The associated doctors will have control of the affairs and policies of the association. Patient-doctor relationship, the free choice of physicians and the preservation of the present system of the practice of medicine will be safe-guarded. The plan will differ from our present system only in the method used to pay for services. A majority of the board of directors shall consist of doctors.

During the first year this plan is put into effect, the coverage will be for surgical and obstetrical services and partially for x-ray services. At an early date, when public demand increases, and actuarial experience has been gained, other medical services will be added. The association will employ the Richmond Hospital Service Association, and other Blue Cross Plans in Virginia, as the agencies for offering the certificates to the public, collecting the dues, paying the doctors, and keeping statistical data.

The public will be divided into two income classes. For those below the following levels, the certificates will cover the full costs of professional care:

Single subscriber—maximum income—\$2,000.00 a year
 Man and wife—maximum income—\$2,500.00 a year
 Family (children under 19)—maximum income—\$3,000.00 a year

For those above these levels the plan will pay according to the schedule of fees and the doctor will bill the patient direct for the amount of his regular fee over the schedule. The schedule of fees is essentially that used in Massachusetts, Michigan, New York and New Jersey.

The right which doctors now have to decline services will not be affected by the plan.

The following resolution is presented:

WHEREAS, the Medical Society of Virginia in 1939 approved the principle of voluntary prepayment for medical services, and

WHEREAS, it is believed that the state-wide acceptance of such a plan, under the control of the medical profession, would be highly effective in providing a better distribution of medical services to those in the lower income groups, and

WHEREAS, such plans widely adopted throughout the nation would safeguard the interests of the medical profession and constitute a powerful weapon against socialized medicine.

THEREFORE, BE IT RESOLVED, that the Medical Society of Virginia endorse the Medical Service Plan of the Associated Doctors of Virginia and recommend its acceptance by the doctors and hospitals in its various counties.

Dr. Rodman moved the adoption of the resolution. Seconded. Dr. Emmett said it seemed to him the House of Delegates had already endorsed the plan in principle several years ago. The plan is not perfect as the organization has not had time to iron out all difficulties. He was in favor of its adoption with an all inclusive medical service as the project may be worked out. Dr. M. B. Hiden stated he had recently had several hours discussion with one of the senior public health officers who felt that Sidney Hillman, one of the most powerful men in this country today, would put in socialized medicine at once, if Roosevelt was re-elected. Also, one of the best known congressmen said the public is demanding some form of better distribution of medical care, and, if the doctor doesn't do something, Congress will. Dr. W. L. Powell asked what effect it would have on locations that already have this service. Dr. Robertson replied none, as they would not go into those communities. Dr. Mulholland said that this is a plan controlled by doctors. There may be a good many things in it that have to be ironed out, but the proposal has a good deal of value and is one of the experiments that ought to be approved. Dr. Frank Johns was in favor of any plan that includes the medical profession at large and asked if it covered any medical fees at all. Dr. Robertson stated that in the original form this did not include medical fees but these can be added. Dr. Mulholland agreed that this plan only touches one phase of the problem and the whole thing should be taken care of, but it is not possible to present a comprehensive plan at this time because it will have to be worked out in detail. This is a beginning to meet a certain demand on the part of the lower income group.

Dr. Robertson asked the privilege of the floor for Dr. Norman M. Scott of Newark, N. J., who was to speak at a meeting of the Associated Doctors that evening. Dr. Scott said he did not want to intimate that what is being done in New Jersey will answer the problem in Virginia. They have a rather extensive plan in New Jersey, which includes medical service in that it provides benefits for cases admitted to hospitals. They cannot offer medical service in the home and office because they do not have any control over this. People do not go to hospitals for minor illnesses and would abuse this privilege in the home. In their study, they analyzed 100,000 hospital service contracts for one year. About 10 per cent of the cases in the summer are medical and the average cost is about \$35.00. In the winter months the admission rate goes up to 20-22 per cent and 16 per cent of the expenditures are for medical services. Indigents are covered in the city of Newark and the physician is reimbursed by the City. There is no plan which has been successful which covers all medical care. People really want an insurance for catastrophic illnesses or those which require hospitalization.

Dr. E. H. Terrell stated that this plan came up before the Board of Trustees of the Richmond Academy of Medicine some time ago and a whole evening was spent on it. Feeling it would not be satisfactory, they recommended to the Academy that the plan be not adopted. Later, at a called meeting, they also voted against it. The impression was that there is no way to limit the applicants according to their income. Dr. Scott replied Virginia would have to solve its own problem because conditions are different in every state. It is necessary to have a plan which gives an adequate over-all protection to the profession. After you have taken care of the existing conditions, the fee for service will improve. If everyone waits to get a plan that meets with the personal approval of each individual, there will never be a satisfactory one. This is a question of whether physicians as individuals want to cooperate in the most serious problem that has ever come before the medical profession.

Following Dr. Scott's talk, it was the consensus of opinion that the Society should have an open mind to the plan, with the idea of adding to it from time to time as it was deemed feasible. If some plan is not approved and presented by the medical profession, something will be done about it by the layman. Dr. Hiden stated that Dr. Robertson had only asked the approval of the plan of the Associated Doctors and had not asked for a substitute and he felt the House should endorse the resolution. Dr. Smith felt that the plan should cover all medical services within the hospital and Dr. Robertson said such medical service could be incorporated if it is the wish of this body. Paragraph 4 of the report was amended to read as follows:

During the first year that this plan is put into effect, the coverage will be for personal professional services and partially for x-ray services, with such limitations as may be found necessary by the Board of Directors. The association will employ the Richmond Hospital Service As-

sociation, and other Hospital Service Plans in Virginia, as the agencies for offering the certificates to the public, collecting the dues, paying the doctors, and keeping statistical data. Membership in hospital service plans shall be a prerequisite for this service.

The report was then adopted as amended.

The privilege of the floor was now extended to Mr. Edward F. Stegen, associate administrator of the National Physicians Committee for the Extension of Medical Services, who gave the history of the Committee and of the work it is now doing—especially with regard to the Wagner-Murray-Dingell Bill. He gave a résumé of the proposed work of the Committee and the present status of the threat of political medicine and asked for the cooperation of the medical profession in their work. Mr. Stegen also stated that the Committee had prepared a pamphlet which covers in detail every prepayment medical plan in operation and in closing said he would be glad to discuss any matters pertaining to his work with members while in the city.

The House then adjourned to meet again on Tuesday morning.

October 24, 1944

The House convened on Tuesday morning at 9 o'clock, with the president, Dr. Bowyer, presiding. There being a quorum present, Dr. Showalter presented the following resolution, which was seconded and carried:

WHEREAS, the members of this House of Delegates as well as the physicians throughout Virginia are cognizant of the effective work which the National Physicians Committee for the Extension of Medical Service has performed during the past five years in bringing about better distribution of medical care and a higher level of understanding on the part of the public of the achievements, methods and aims of the medical profession, and

WHEREAS, this House of Delegates also recognizes that the maintenance and extension of the program which the National Physicians Committee has so effectively carried forward requires substantial revenues; therefore,

BE IT RESOLVED, that the House of Delegates of the Medical Society of Virginia register approval of the activities of the National Physicians Committee and recommend to its constituent societies that all individual physicians of Virginia give voluntary moral and financial support to the National Physicians Committee.

The Nominating Committee presented the following report, which was unanimously adopted:

President-Elect—Dr. Julian L. Rawls, Norfolk.

Vice-Presidents—Dr. Harvey B. Haag, Richmond.

Dr. P. S. Smith, Abingdon.

Dr. Wm. R. Whitman, Roanoke.

Secretary-Treasurer—Miss Agnes V. Edwards, Richmond.

Dr. H. B. Mulholland, University, automatically succeeds to the Presidency.

Councilors—

2nd District—Dr. C. L. Harrell, Norfolk.

4th District—Dr. J. L. Hamner, Mannboro.

6th District—Dr. J. R. Gorman, Lynchburg.

8th District—Dr. J. E. Knight, Warrenton.

Those Councilors from the odd numbered districts hold over for another year.

State Board of Medical Examiners—

Dr. J. W. Prestoñ, Roanoke.

Dr. E. G. Scott, Lynchburg

Dr. J. M. Emmett, Clifton Forge.

Delegate and alternate to the American Medical Association were elected as follows:

Delegate—Dr. J. M. Hutcheson, Richmond.

Alternate—Dr. Carrington Williams, Richmond.

Drs. Walter B. Martin and Roshier W. Miller hold over for another year as delegate and alternate respectively.

An invitation from the Roanoke Academy of Medicine was extended to the Society to hold its 1945 meeting in that city, and this was unanimously accepted.

It was moved and seconded that the Society send flowers to Dr. Roshier W. Miller and tell him how much they missed him and regretted his inability to be at the meeting.

A rising vote of thanks was extended to the local committee and the Richmond Academy of Medicine as a whole for their preparations and entertainment at this meeting and also to the hotel management for their cooperation.

Dr. Bowyer thanked the House of Delegates for their cooperation which enabled him to get the business meetings over so promptly and thus make it possible for everyone to attend the scientific sessions.

There being no further business, the House adjourned.

AGNES V. EDWARDS,

Secretary.

Approved:

C. B. BOWYER,

President,

November 13, 1944.

Auditor's Report

October 1, 1943-September 30, 1944

THE OFFICERS AND COUNCILORS,

MEDICAL SOCIETY OF VIRGINIA,

RICHMOND, VIRGINIA.

GENTLEMEN:

We have made an examination of the books of the Medical Society of Virginia for its fiscal year ended September 30, 1944, and now submit our report consisting of the following financial statements and related comments.

EXHIBITS

"A" Balance Sheet.

"B" Statement of Income and Expense.

"C" Receipts and Disbursements of Legislative Committee Special Fund.

Comments

The financial condition of the Society at September 30, 1944, is stated in the Balance Sheet, Exhibit "A", a summary of which is given below in comparison with that at September 30, 1943:

ASSETS:	9-30-44	9-30-43
Cash	\$24,967.01	\$27,712.07
Accounts Receivable	989.34	830.94
Investments—U. S. Bonds	14,915.00	6,336.00
TOTALS	<u>\$40,871.35</u>	<u>\$34,879.01</u>
LIABILITIES AND SURPLUS:		
Accounts Payable	\$ 786.66	\$ 839.86
Surplus:		
General Fund	30,751.29	25,033.99
Special Legislative Fund	9,233.40	9,005.16
TOTALS	<u>\$40,771.35</u>	<u>\$34,879.01</u>

The income and expenses of the General Fund for the fiscal year ended September 30, 1944, are shown in Exhibit "B", prepared on the cash receipts and disbursements basis. The operations for the current and preceding year are stated in condensed form below:

INCOME:	9-30-44	9-30-43
Medical Society	\$ 5,786.80	\$ 5,438.52
Medical Monthly Publication	14,631.70	12,155.08
TOTALS	<u>\$20,418.50</u>	<u>\$17,593.60</u>
EXPENSES:		
Medical Society	\$ 4,349.15	\$ 5,259.78
Medical Monthly Publication	10,532.65	9,442.27
TOTALS	<u>\$14,881.80</u>	<u>\$14,702.05</u>
SURPLUS INCOME FOR YEAR.....	<u>\$ 5,536.70</u>	<u>\$ 2,891.55</u>

The receipts and disbursements of the Legislative Committee Special Fund, which are not included in the above tabulation, were as follows:

Receipts for the Year.....	\$3,080.43
Disbursements for the Year.....	<u>2,852.19</u>
Surplus Receipts for the Year.....	\$ 228.24
Cash Balance—October 1, 1943.....	9,005.16
Cash Balance—September 30, 1944.....	<u>\$9,233.40</u>

The membership dues are \$7.00 annually and the collections therefrom are apportioned:

For General Fund Expenses.....	\$ 3.00
For Subscription to the Medical Journal.....	2.00
For Legislative Committee Expenses.....	2.00

The cash balances of the Society at September 30, 1944, as stated in Exhibits "B" and "C", were confirmed by certificates from the respective banks.

Investments in United States Savings Bonds as of September 30, 1944, were verified by inspection of the bonds as follows:

SERIES	DATE ACQUIRED	DATE OF MATURITY	COST	VALUE AT MATURITY	VALUE AT 9-30-44
B	2-1-36	2-1-46	\$ 525.00	\$ 700.00	\$ 630.00
D	10-1-39	10-1-49	1,500.00	2,000.00	1,640.00
D	3-1-40	3-1-50	375.00	500.00	410.00
F	2-1-43	2-1-55	3,700.00	5,000.00	3,725.00
F	12-1-43	12-1-55	6,290.00	8,500.00	6,290.00
F	1-1-44	1-1-56	370.00	500.00	370.00

F	2-1-44	2-1-56	1,110.00	1,500.00	1,110.00
F	6-1-44	6-1-56	740.00	1,000.00	740.00
TOTALS			<u>\$14,610.00</u>	<u>\$19,700.00</u>	<u>\$14,915.00</u>

Insurance in force, according to policies on hand, was as listed below:

Office Furniture and Fixtures.....	\$1,000.00
Walter Reed Home, Belroi, Virginia.....	1,000.00
Fidelity Bond, Secretary-Treasurer.....	2,500.00

Accounts Receivable for membership dues and for advertising in the Medical Monthly Publication are stated at collectible value as estimated by the Secretary-Treasurer.

All cash receipts of record were accounted for by bank deposits, and disbursements were evidenced by satisfactory vouchers. The bookkeeping records for the year under examination were found in proper order.

Respectfully submitted,

SHEPHERD, JACKSON & WIGGINS,
Certified Public Accountants.

Balance Sheet—September 30, 1944 Exhibit "A"

ASSETS	
CASH:	
General Fund (Exhibit "B").....	\$15,733.61
Special Fund (Exhibit "C").....	9,233.40
	<u>\$24,967.01</u>
DUE FROM MEMBERS	
(Estimated Collectible Value):	
1944 Dues—50 @ \$7.00	350.00
ACCOUNTS RECEIVABLE:	
Virginia Medical Monthly for Advertising	639.34
INVESTMENTS:	
U. S. Savings Bonds	14,915.00
TOTAL ASSETS	<u>\$40,871.35</u>

LIABILITIES AND SURPLUS	
ACCOUNTS PAYABLE:	
Preparation of Medical Journal—	
September, 1944, Issue	\$ 586.26
Social Security Tax	24.00
Federal Withholding Tax	176.40
	<u>\$ 786.66</u>
SURPLUS (Excess of Assets over Liabilities):	
General Fund	\$30,751.29
Special Fund—Legislative Committee	9,333.40
	<u>\$40,084.69</u>
TOTAL LIABILITIES AND SURPLUS.....	<u>\$40,871.35</u>

Statement of Income and Expense For Fiscal Year Ended September 30, 1944 Exhibit "B"

MEDICAL SOCIETY OF VIRGINIA DIVISION	INCOME:	ACTUAL	BUDGET
Membership Dues @ \$3.00 each.....		\$ 4,438.90	
Royalties on History of Medicine		60.10	
Interest on Savings Accounts (½)		34.48	

Commercial Exhibits:

Balance from Preceding Year	752.69
Net Receipts—Current Year	500.63
TOTAL	\$ 5,786.80

EXPENSES:

Salaries (Apportioned):

Secretary-Treasurer	\$1,800.00
Clerical Assistance	1,080.00

	\$ 2,880.00	\$ 2,880.00
Office Rent and Telephone	367.80	365.00
Stationery and Office Supplies	56.56	75.00
Repairs and Replacements	17.25	40.00
Postage	138.83	225.00
Audit Fee (1/2)	30.00	30.00
Social Security Tax (1/2)	24.00	30.00
Miscellaneous Expense	12.03	25.00
Convention Expenses	451.74	600.00
Delegates to A.M.A. Convention	92.80	100.00
President's Expense	9.02	100.00
President-Elect's Expense	---	50.00
Councilors' and Officers' Expense	61.74	75.00
Walter Reed Commission	26.00	75.00
Department of Clinical and Medical Education	.78	600.00
Committee on Scientific Exhibits	152.50	350.00
Committee on Medical Economics	---	75.00
Committee on Child Welfare	6.60	10.00
Committee on Maternal Health	11.00	20.00
Committee on Cancer	10.50	20.00

TOTALS ----- \$ 4,349.15 \$ 5,745.00

SURPLUS INCOME FOR YEAR ----- \$ 1,437.65

VIRGINIA MEDICAL MONTHLY DIVISION

INCOME:

	ACTUAL	BUDGET
Advertising	\$11,270.06	
Subscriptions:		
Membership Dues		
@ \$2.00 each	\$2,959.26	
Non-Members	367.90	
	3,327.16	
Interest on Savings Accounts (1/2)	34.48	
TOTAL	\$14,631.70	

EXPENSES:

Salaries (Apportioned):

Secretary-Treasurer	\$1,800.00
Clerical Assistance	1,080.00

	\$ 2,880.00	\$ 2,880.00
Preparation of Journal, Including		
Distribution Cost	7,123.81	6,500.00
Rent and Telephone	363.21	365.00
Stationery and Office Supplies	30.36	35.00
Repairs and Replacements	17.25	40.00

Office Postage	46.70	45.00
Audit Fee (1/2)	30.00	30.00
Social Security Tax (1/2)	24.00	30.00
Miscellaneous Expense	17.32	20.00

TOTALS ----- \$10,532.65 \$ 9,945.00

SURPLUS INCOME FOR YEAR ----- \$ 4,099.05

SUMMARY OF OPERATIONS

DIVISION	ACTUAL INCOME	ACTUAL EXPENSES	SURPLUS INCOME
Medical Society	\$ 5,786.80	\$ 4,349.15	\$ 1,437.65
Medical Journal	14,631.70	10,532.65	4,099.05
TOTALS	\$20,418.50	\$14,881.80	\$ 5,536.70

RECONCILIATION OF CASH BALANCE:

Balance—October 1, 1943	\$18,706.91
Add: Surplus Income for Year	5,536.70

TOTAL ----- \$24,243.61

Deduct: U. S. Government Bonds Purchased 8,510.00

Balance—September 30, 1944 ----- \$15,733.61

DEPOSITORIES AND BALANCES ON DEPOSIT:

First & Merchants National Bank	\$13,700.05
The Morris Plan Bank of Virginia	1,126.76
Southern Bank & Trust Company	906.80
	\$15,733.61

Legislative Committee Special Fund—Receipts
and Disbursements

For Fiscal Year Ended September 30, 1944

Exhibit "C"

BALANCE—OCTOBER 1, 1943 ----- \$ 9,005.16

RECEIPTS:

Membership Dues @ \$2.00 each	\$ 2,971.50
Gift—Coroner's Committee	50.00
Interest on Bank Balance	58.93
	3,080.43
TOTAL	\$12,085.59

DISBURSEMENTS:

Legislative Committee:

General Expenses	\$ 575.52
Legal Services	1,765.00
	\$ 2,340.52

Coroner's Sub-Committee:

General Expenses	\$ 111.67
Legal Services	400.00
	511.67

TOTAL DISBURSEMENTS ----- 2,852.19

BALANCE—SEPTEMBER 30, 1944 ----- \$ 9,233.40

NOTE: The cash balance of \$9,233.40 is on deposit with the First & Merchants National Bank, Savings Account No. 15224.

WOMAN'S AUXILIARY to the MEDICAL SOCIETY OF VIRGINIA

New Officers and Chairmen of Committees.

At the Richmond meeting of the Auxiliary, October 24, Mrs. Paul C. Pearson of Aylett was installed as president for the ensuing year. Officers elected to serve with her are:

President Elect—Mrs. P. M. Chichester, Abingdon.

Vice-Presidents—Mrs. R. M. Reynolds, Norfolk.

Mrs. Stuart McBryde, Manassas.

Mrs. J. Walker Jackson, Machipongo.

Mrs. J. E. Hamner, Petersburg.

Recording Secretary—Mrs. C. C. Smith, Norfolk.

Corresponding Secretary—Mrs. Hawes Campbell, Turpin.

Treasurer—Mrs. Reuben F. Sinms, Richmond.

Parliamentarian—Mrs. Fletcher J. Wright, Petersburg.

Historian—Mrs. H. A. Latane, Alexandria.

Chairmen of Committees were named as follows:

Hygeia—Mrs. J. L. DeCormis, Accomac.

Bulletin—Mrs. M. H. Harris, West Point.

Cancer Control—Mrs. Wright Clarkson, Petersburg.

Finance—Mrs. Henry Townsend, Marshall.

Jane Todd Crawford Memorial—Mrs. A. G. Horton, Norfolk.

Legislation—Mrs. J. Powell Williams, Richmond.

Leigh-Hodges-Wright Memorial—Mrs. Fletcher J. Wright, Petersburg.

Membership—Mrs. R. M. Reynolds, Norfolk.

Organization—Mrs. W. Clyde West, Alexandria.

Press and Publicity—Mrs. A. G. Shetter, Richmond.

Program and Health—Mrs. J. E. Hamner, Petersburg.

Public Relations—Mrs. Robt. B. Hightower, Alexandria.

Revisions—Mrs. E. Latane Flanagan, Richmond.

Norfolk Auxiliary.

The Norfolk Auxiliary met on October 30 in the Library of the Medical Arts Building in Norfolk. Mrs. Southgate Leigh, Jr., was installed as president, succeeding Mrs. R. M. Reynolds. Other of-

ficers for the year are: President-elect, Mrs. C. M. McCoy; vice-presidents, Mrs. Charles Lupton, Mrs. James W. Anderson and Mrs. J. R. St. George; recording secretary, Mrs. Kenneth Wallace with Mrs. M. F. Brock as assistant; treasurer, Mrs. A. K. Wilson, with Mrs. Mallory Andrews assistant; corresponding secretary, Mrs. P. B. Parsons with Mrs. Brock Jones assistant; parliamentarian, Mrs. C. C. Smith; historian, Mrs. Rufus S. Kight.

Mrs. Reynolds gave a report of the State Auxiliary meeting, stating that Dr. C. B. Bowyer in his talk stressed health education in the public schools. Annual reports of Standing Committees were given and accepted. Upon request of the Red Cross, the group voted to donate \$10.00 in addition to voluntary contributions for hospitalized service men. It was announced that the next meeting would be on November 20.

Standing Committees announced were: *Advisory*, Mrs. R. M. Reynolds, Mrs. W. E. Butler and Mrs. H. W. Rogers; *Birthday*, Mrs. Albert G. Horton; *Bulletin*, Mrs. B. A. Doggett; *Courtesy*, Mrs. M. N. King; *Doctor's Day*, Mrs. C. C. Smith; *Finance*, Mrs. A. K. Wilson, Mrs. Mallory Andrews and Mrs. R. M. Reynolds; *Health Education*, Mrs. R. B. Grinnan; *Hygeia*, Mrs. Ben Steingold and Mrs. Michael Greenwald; *Jane Todd Crawford Memorial Fund*, Mrs. J. R. Kight; *Legislative*, Mrs. K. W. Howard; *Membership*, Mrs. C. M. McCoy; *Press and Publicity*, Mrs. W. C. Salley; *Public Relations*, Mrs. Brock Jones; *Revisions*, Mrs. Wm. Lett Harris; *Social*, Mrs. Millard Savage; *Telephone*, Mrs. Stark Sutton; *War Fund*, Mrs. C. J. Devine; and *War Service*, Mrs. James W. Anderson.

CLARA P. BROCK (Mrs. M. F.),

Chairman, Press and Publicity.

The Mid-Tidewater Auxiliary

Met at the home of Mrs. E. L. W. Ferry at Milers Tavern on October the 31st, with the president, Mrs. Hawes Campbell, in the chair. At the business meeting, Mrs. W. S. Cox was appointed parliamentarian and Mrs. Paul C. Pearson and Mrs. Ferry the Nominating Committee. Interesting papers were presented by Mrs. Ferry and Mrs. Pearson. The latter also told of her objectives for the year as State President, and Mrs. Campbell gave a report of the State meeting held recently. Following the program, the ladies joined the doctors for lunch at the Masonic Lodge.

VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

(Founded by Landon B. Edwards, M. D., April, 1874)

WYNDHAM B. BLANTON, M. D.,

Editor Emeritus

M. PIERCE RUCKER, M. D.,

Editor

AGNES V. EDWARDS

Business Manager

PUBLICATION COMMITTEE

M. PIERCE RUCKER, M. D., Richmond, *Chairman*

J. EDWIN WOOD, JR., M. D., UNIVERSITY

WYNDHAM B. BLANTON, M. D., Richmond.

All correspondence regarding editorial matter, original articles, and policy should be directed to the Editor. Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 1200 East Clay Street, Richmond 19, Virginia. The MONTHLY is not responsible for the opinions and statements of its contributors. All advertisements are accepted subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association. Annual Subscription, \$2.00. Single copies 25c.

VOL. 71

DECEMBER, 1944

No. 12

The Annual Meeting

THE ninety-seventh meeting is now a matter of history. By common consent it was a successful meeting. Five hundred and seventy doctors registered. The business meetings went off according to schedule, but unfortunately the scientific program became involved and some papers were not read. These, however, will be published in the MONTHLY. The scientific papers were of high order and provoked good discussions. The scientific exhibits were well prepared and were both interesting and instructive. They deserved a better showing than in the out-of-the-way balcony. The technical exhibits were well worthwhile. Fortunately, they were not so inaccessible as the scientific exhibits.

The luncheon meetings of the special societies have become an important part of the Annual Meeting. The obstetricians and gynecologists this year depended on home talent for their meeting, and they had one of the best meetings they have ever had. Dr. Tiffany Williams, Chairman of the Maternal Welfare Committee, put on a meeting of his committee in which the doctors interested were invited to participate. At times the members of the committee were really "put on the spot" by the visitors. It was the feeling at the end of the meeting that there should be such meetings frequently.

The Dinner on Tuesday evening was a gala affair in spite of the times. It was preceded by a cocktail party on the Roof Garden. By the time the crowd had made its way up to the Roof and back again, it had become well mixed. Where the hotel got enough help to serve the dinner is a mystery, but the dinner was a good one and well served. There were to have been no speeches; however, the chairman had the happy inspiration of calling on General J. Fulmer Bright, and "our Fulmer" rose to the occasion with a delightful impromptu speech, taking us in fancy flight from our student days when we knew the eleven points of interest on the under-surface of the petrous portion of the temporal bone to the grinding to pieces of the rubber tires of

the super fortresses on the battlefronts in the four quarters of the globe. In between he commented in rhyme on the dietary habits of Methuselah.

At the Council Meeting and in the House of Delegates there was considerable discussion of the proposed Medical Examiners law. It was quite evident that all those present were not familiar with the provisions of the proposed Bill. For their benefit it should be said that if it passes the Legislature in its present form, the present coroners will not be disturbed, although their title will be changed to that of Deputy Medical Examiner. Those in the counties, certainly, will be paid approximately twice as much as they are getting at the present time. They will have the advantages of consultation with expert regional pathologists, and also of a central medico-legal expert and central laboratory equipped for any sort of toxicological examination. Autopsies, under the proposed law, can be ordered by either the coroner (Deputy Medical Examiner) or the Commonwealth's attorney.

The plan for the prepayment of surgical and obstetrical services to the low-income group was discussed at length, and the House of Delegates moved that medical care for hospitalized patients be added to the plan.*

The House of Delegates also discussed the problem of unskilled help in State Hospitals. It was reported that a number of beds in the hospitals for tuberculosis were idle because it was impossible to get domestic help to wait on patients who were waiting to fill these beds.

The sociological problems that confront the medical profession, and will confront the profession to even a greater extent, were covered in the President's address which appeared in the November issue. Governor Darden spoke along the same lines. It was the hope of the Governor that in the near future all the school children in Virginia could have a medical examination, and that each County will have a health department. The Governor was emphatic that the practice of medicine should be controlled by doctors. It was a comfort to hear him say that he hoped he would always be able to choose his own doctor, and that he wanted not only a skilled doctor but one to whom it was interesting to talk.

Priorities

MANY mediaeval manuscripts have schematic drawings of the viscera in their relative positions in the body, the so-called *situs viscerarum* figures. Some six or seven of these show the pregnant uterus. The manuscripts having such figures have (or had) a wide geographical distribution over Europe. Several are Persian in origin, and yet the figures have such a marked similarity that Sudhoff who studied these manuscripts thought that there must have been an earlier work, as yet undiscovered, from which these were copied.

It is foolish to differ with an authority who has studied a subject. Nevertheless, it occurs to us that there is another explanation for the similarity of these XII and XIII century drawings. Primitive minds react to certain environment and stages of development whether it be in Europe or Persia. There is just as much similarity between the pyramids in Egypt and those in Yucatan as there is between the various *situs* figures, and yet no one has suggested that they have an older model. The burial customs of the Egyptians and the Incas who lived near dry regions in the Andes were remarkably similar.

*See letter from Dr. Alex. F. Robertson, Jr., in this issue of the MONTHLY.

Modern times furnish many examples of minds reaching the same conclusions independently. In fact, seldom does a discovery spring full fledged from the mind of some modern Jove. The acquisition of new knowledge is a slow and difficult process. Someone makes a little advance here, someone else makes a similar one yonder, and still a third step is taken; it may be on the other side of the world. Then, like a general, someone consolidates these gains and the world is ready for a new advance. This progress is frequently so slow and complicated that it is difficult to determine who the real discoverer was. All too frequently a man is so far ahead of his time that he gets no credit at all.

The discovery of anesthesia is a case in point. It is now generally agreed that Crawford W. Long was the first to make use of anesthesia in surgery. In 1842 he induced ether anesthesia and removed a cystic tumor from the neck of James Venable. Four years later Morton administered ether in the Massachusetts General Hospital and Dr. John Collins Warren removed a superficial vascular tumor of the neck. Morton may have been influenced by Wells' work with nitrous oxide anesthesia in dentistry. No one has succeeded in showing that there was an interchange in ideas on the subject between New England and Georgia. The two groups arrived at the same results independently of each other, and neither seems to have been influenced by Hickman who previously had approached the subject in a much more modern fashion in his experiments upon animals. Hickman was so far in advance of his time that he got no recognition whatever.

To change the figure, when knowledge reaches a certain degree of saturation it will throw down a precipitate or crystals. This process can be hastened somewhat by adding foreign material, as any child, who makes crystals of rock candy form on a thread, well knows. When this view of the situation is taken it seems futile to engage in unseemly controversy about priority such as the ether squabble. Had neither Long nor Morton, nor Wells, nor Jackson lived, anesthesia would have been discovered; it may be in Philadelphia or perhaps beyond the mountains in Lexington. We do not for a moment wish to belittle scientific discovery. Original thought is certainly rare enough to be honored whenever and wherever it appears. The French Pasteur and the German Koch who independently discovered bacteria and created a new science deserve all the honors that have been heaped upon them. The world is richer for their wonderful minds and beautiful characters, but, if neither had lived, there still would be a bacteriology.

Let us have, then, our heroes of science for the inspiration they give us, if for no other reason, but let us be cautious in the use of the little word *first*. If the Chinese vaccinated against smallpox hundreds of years ago, it in no wise detracts from the importance of Jenner's work. Columbus discovered America—but was he the first?

Buy all the Bonds you can during the Sixth War Loan.

Your Country Needs Your Help. Bonds Bought NOW may mean the Saving of Many Lives.

Societies

Luncheon Meetings of Special Societies.

On Tuesday, during the annual meeting of the Medical Society of Virginia, several societies of specialists in the State held luncheon meetings for the purpose of talking over problems of particular interest to them. Officers for the ensuing year were elected by these groups as follows:

VIRGINIA SECTION—AMERICAN COLLEGE OF PHYSICIANS

Officers elected for the ensuing year are: President, Dr. J. W. Preston, Roanoke, and secretary, Dr. Alex. F. Robertson, Jr., Staunton.

VIRGINIA OBSTETRICAL AND GYNECOLOGICAL SOCIETY

There were twenty-three members at the luncheon and fifteen visitors attended the open meeting following, at which the method of reviewing the study of maternal deaths was demonstrated. They elected Dr. S. E. Oglesby of Lynchburg as president; Dr. F. O. Plunkett of Lynchburg as vice-president; and Dr. L. L. Shamburger of Richmond as secretary.

VIRGINIA RADIOLOGICAL SOCIETY

This group elected Dr. Hunter B. Frischkorn of Richmond and Dr. Frank A. Kearney of Phoebus to membership and named Dr. Clayton W. Eley of Norfolk as president, Dr. W. P. Gilmer of Clifton Forge as vice-president, and re-elected Dr. E. L. Flanagan of Richmond secretary.

VIRGINIA UROLOGICAL SOCIETY

Dr. Samuel A. Vest of the University of Virginia, Charlottesville, was elected president of this Society, with Dr. W. W. S. Butler of Roanoke as vice-president. Dr. W. W. Koontz of Lynchburg was re-elected secretary.

VIRGINIA PEDIATRIC SOCIETY

Dr. Alex F. Hartman of St. Louis, guest speaker at the morning session of the Medical Society of Virginia, also spoke at the luncheon meeting of this Society. At the business session, Dr. Lee E. Sutton of Richmond was elected president, Dr. Charles Pugh Brown of Norfolk vice-president, and Dr. Emily Gardner of Richmond was re-elected secretary.

VIRGINIA ORTHOPEDIC SOCIETY

At the luncheon held by this group, there was a survey of the infantile paralysis cases in the State and they were divided between the Medical College of Virginia and the University of Virginia hospitals, according to location.

There was no change in the Officers, Dr. J. B. Dalton holding over as president and Dr. James T. Tucker as secretary. Both are of Richmond.

VIRGINIA SOCIETY OF CHEST PHYSICIANS

Upon adjournment of the State Society, this group had lunch at Pine Camp as guests of the medical staff. Forty-five members attended this meeting which was addressed by Dr. Herman E. Hilleboe, Surgeon-in-Charge of Tuberculosis Control of the U. S. Public Health Service. His subject was Newer Methods in the Diagnosis of Tuberculosis, and he placed special emphasis on new developments in the field of x-ray which greatly simplify and improve present technique.

Election of officers is held at a meeting in the Spring. Those now in office are: President, Dr. W. J. Ozlin of South Hill; vice-president, Dr. R. H. Walker of Martinsville; and secretary-treasurer, Dr. E. C. Harper of Richmond.

The Mid-Tidewater Medical Society

Held its regular quarterly meeting at Millers Tavern on October 31, with Dr. Paul C. Pearson of Aylett presiding. Reports were given of the Richmond meeting of the State Society and the following papers presented: Contraction Ring and Treatment by Dr. M. P. Rucker, and Cardiac Asthma and Treatment by Dr. J. Morrison Hutcheson, both of Richmond.

At the business session, officers were elected for 1945. At the January meeting, Dr. W. S. Cox of West Point will succeed to the presidency. The following were elected to serve with him: President-elect, Dr. A. L. Van Name of Urbanna; vice-presidents, Dr. R. D. Bates of Newtown, Dr. J. R. Parker of Providence Forge, Dr. H. A. Tabb of Gloucester, Dr. Clarence Campbell of Sparta, Dr. M. H. Harris of West Point, Dr. W. P. Jones of Urbanna, Dr. J. M. Gouldin of Tappahannock, and Dr. J. R.

Gill of Mathews. Dr. M. H. Harris was re-elected secretary-treasurer. Lunch was served at the Masonic Lodge for the doctors and members of the auxiliary.

The next meeting of the Society will be in West Point on January the 23rd, 1945.

Albemarle County Medical Society.

At the meeting of this Society on November the 2nd, the principles of the plan for the prepayment of physicians' fees, discussed at the meeting of the State Society in October, were approved. In the scientific part of the program, Dr. J. Marion Bryant of the University Hospital read a paper entitled "The Indications and Limitations of Clinical Electrocardiography".

Officers of this Society are Dr. W. W. Waddell, Jr., president, and Dr. W. Roy Mason, Jr., secretary-treasurer.

The Augusta County Medical Association

Held its quarterly meeting on November the 1st, at which time Dr. McLemore Birdsong of the University of Virginia presented a paper on Recent Advances in the Treatment of Meningitis, and Dr. Alex. F. Robertson, Jr., of Staunton spoke on the Prepayment Medical Plan.* The Society voted

*This plan is given under the heading of Correspondence in this issue of the MONTHLY.

unanimously to put itself on record as being in favor of the plan as outlined by Dr. Robertson. Dr. Marion Whalen of Waynesboro was elected to membership.

Dr. J. Hansford Thomas of Greenville is president and Dr. John H. Guss of Staunton secretary of this Society.

The Neuropsychiatric Society of Virginia

Held a meeting at the Eastern State Hospital, Williamsburg, on November the 9th, with Dr. O. B. Darden of Richmond presiding. Dr. J. Asa Shield of Richmond is secretary. The program included the following papers:

Brain Tumors Found at Autopsies at the Eastern State Hospital—Dr. E. L. Crumpacker and Dr. Walther Riese.

Problems Met by the Navy Psychiatrist in Training Men for the Navy—Lt. Comdr. Henry R. Drewry, USNR, Camp Peary.

Observations on Combat Psychiatric Casualties—Comdr. George N. Raines, USN, and staff of the U. S. Naval Hospital, Portsmouth.

Upon completion of the program, there was a cocktail hour at the Williamsburg Lodge, followed by dinner.

News

Eisenhower Urges Bond Drive Support.

General Dwight D. Eisenhower, Supreme Commander of Allied Expeditionary Forces, has the following to say with regard to the need of buying bonds during the 6th War Loan drive:

"Your assistance is needed and the most important job now for the people at home is to make the Sixth War Loan a success. To make sure of final victory we must redouble and sustain our efforts, both here and everywhere. The money must be raised and our men on all the fronts depend upon you. Contact your local War Finance Committee and join the home front army as a volunteer War Bond worker. On behalf of your sons, brothers, husbands, and friends in this great war theater I request that you do your part to see that the Sixth War Loan is vastly oversubscribed."

Buy promptly and as many bonds as you can.

Associated Doctors of Virginia Changes Name.

At a meeting of its Board of Directors on Friday, November 10, 1944, the name of this non-profit medical-surgical-obstetrical service plan was changed to VIRGINIA MEDICAL SERVICE ASSOCIATION.

Officers of the Association are:

President, Dr. Alex. F. Robertson, Jr., Staunton.
Vice-President, Dr. Ray A. Moore, Farmville.
Secretary-Treasurer, Dr. Morgan B. Raiford, Franklin.
Chairman of Board, Dr. Vincent W. Archer, Charlottesville.

The Board of Directors is to be composed of thirty-five members, two-thirds of whom will be doctors. Those already named are:

Dr. Vincent W. Archer	Dr. Ray A. Moore
Dr. Richard P. Bell	Dr. Henry B. Mulholland
Dr. Russell Buxton	Dr. Wayne McL. Phipps
Dr. James H. Deyerle	Dr. Frank C. Pratt
Dr. J. Morehead Emmett	Dr. William R. Pretlow
Dr. J. Morrison Hutcheson	Dr. Morgan B. Raiford
Dr. Francis H. McGovern	Dr. Julian L. Rawls

Dr. N. F. Rodman Dr. M. Pierce Rucker
 Dr. Alex. F. Robertson, Jr. Dr. Ernest G. Scott
 Mr. Charles A. Taylor

A statement as to the plan of the Association, with a list of fees, is given under the heading of Correspondence in this issue of the MONTHLY.

The Profession and Laymen in Tuberculosis Control.

In a recent article, Dr. Herman E. Hilleboe, Chief, Tuberculosis Division, U.S.PHS, says "The control of tuberculosis was one of the first activities in public health in which the cooperation of the public and professional people led to substantial progress in controlling the disease by the sheer power of public education."

"Recent scientific advances have awakened public interest in tuberculosis control. New technical developments in x-ray equipment now make it possible to apply this essential tool to millions of the population, instead of only thousands, by means of small film mass radiography—a simple, effective and cheap method of finding tuberculosis early."

Dr. Hilleboe gives full credit to the National Tuberculosis Association and its affiliated associations for their share in laying the foundation for the eventual eradication of tuberculosis through their sustained and successful program of public health education. He feels that this can be attained if the voluntary and official agencies will pool their resources on a local level and make a frontal attack on a broad front.

He lists eight objectives: 1. Chest x-ray examination for entire population. 2. Follow-up of every case discovered in x-ray examination. 3. Periodic examination, including chest x-ray, of persons with inactive disease. 4. Prompt treatment for active cases which can make a good recovery. 5. Strict isolation of open cases to prevent further spread of the disease. 6. Intensified health education activities among the general population, patients and their families. 7. Expanded research in tuberculosis and public health methods. 8. Financial aid to the tuberculous breadwinner.

The volunteer tuberculosis associations, composed of lay and professional members, have a definite responsibility in meeting those objectives. The people of this country will be given an opportunity during the month of December to support these organizations through the purchase of Christmas Seals,

the sole source of income for these volunteer groups. Buy and use Christmas Seals.

NORA SPENCER HAMNER, R.N.

Medical College of Virginia News.

Dr. Ernest J. Jaqua, Educational Director, Baruch Committee on Physical Medicine, and Dr. A. R. Mann, Vice-President of the General Education Board, were recent college visitors.

Dr. W. T. Sanger, President, and Dr. J. P. Gray, Dean of the school of medicine, attended the annual meeting of the Association of American Medical Colleges in Detroit, October 23-25.

Gifts in the amount of \$950.00 have been received during the past two months for loan and scholarship funds in the school of pharmacy. The Office of Scientific Research and Development of the Federal government has made an allotment of \$11,025.00 for the continuation of research on shock and burns under the direction of Dr. E. I. Evans, associate professor of surgery.

Armistice Day exercises were held at The Monumental Church at twelve o'clock noon on November 11 in conjunction with the veterans of Base Hospital 45. Reverend George Ossman, rector of the church, gave the invocation and benediction. President Sanger welcomed the assembly and introduced the speakers. Dr. John Bell Williams represented Dr. Stuart McGuire, war-time commander of Base Hospital 45 in 1918. Lieutenant Mary V. Duncan, who had served in Africa and Italy with the present General Hospital 45 spoke briefly. Dr. A. L. Currie, rector of the Second Presbyterian Church, made the principal address of the occasion.

Dr. J. P. Gray, Dean of the school of medicine; Dr. Porter P. Vinson, professor of bronchoscopy, esophagoscopy, and gastroscopy; Dr. Austin I. Dodson, professor of urology; Dr. T. Dewey Davis, associate professor of medicine; Dr. E. I. Evans, associate professor of surgery; Dr. Lawther J. Whitehead, associate professor of radiology; and Dr. Bernard Black-Schaffer were participants in the program of the Southern Medical Association in St. Louis, November 13-16. Others on the faculty attending the meeting were: Dr. Thomas W. Murrell, professor of dermatology; Dr. H. H. Ware, Jr., professor of obstetrics; Dr. Lee E. Sutton, Jr., professor of pediatrics; Dr. Frances A. Hellebrandt, professor of physical medicine.

News from University of Virginia, Department of Medicine.

Dr. Fletcher D. Woodward gave the American Board fall Examination on Otolaryngology in Chicago on October 4th to 6th. He also attended the Annual Meeting of the American Academy of Ophthalmology and Otolaryngology in Chicago the week of October 9th through 14th and gave three lectures on "The Management of Recent Fractures of the Face".

Dr. Ralph B. Houlihan received a grant of \$2,000 from the John and Mary R. Markle Foundation for a period of one year (November 1) to aid in his research study of agglutinative action of streptococcus viridans on blood platelets.

Dr. Beverly C. Smith, Associate in Surgery at the College of Physicians and Surgeons, Columbia University, spoke at the meeting of the University of Virginia Medical Society on November 10 on the subject "The Use of Radio-Active Sodium as a Tracer Substance in the Study of Peripheral Vascular Disease."

Dr. Dudley C. Smith attended a National Venereal Disease Control Conference in St. Louis, Missouri, November 9th to 11th. This conference was under the auspices of the National Research Council and the U. S. Public Health Service. The theme of the conference was "Problems in Venereal Disease Control After the War." Dr. Smith is a member of the investigating unit of the Penicillin Panel of the Office of Scientific Research and Development.

On final settlement of the estate of the late Dr. William Evelyn Hopkins, noted Ophthalmologist of Los Angeles, California, the sum of \$29,994.00 became available to the Hopkins Medical Library Fund in addition to an earlier installment of \$13,432.00.

Dr. W. W. Waddell, Professor of Pediatrics, attended the meeting of the Southern Medical Association in St. Louis on November 14 and spoke on the subject "Neonatal Mortality Rates in Infants Receiving Prophylactic Doses of Vitamin K".

Personnel Changes in State Department of Health.

Dr. Donald K. Freedman assumed the position of Health Officer of the Peninsula Health District on November 1, succeeding Dr. W. W. Fuller, resigned. Dr. Freedman is on lend lease from the

U. S. Public Health Service, and was formerly Assistant Health Officer of the Peninsula Health District, and was located at Hampton.

Dr. E. W. Langs resigned recently as Health Officer of Norfolk-Princess Anne Health District, and has been succeeded by Dr. William B. Baily, who has headquarters in Portsmouth. He is also on lend lease from the Federal Government.

Dr. Orrin K. Phlegar,

Who has been for some years at Bluefield, Va., is now located in Dayton, Ohio, where he expects to practice for the war's duration.

The Seaboard Medical Association of Virginia and North Carolina

Is having its 49th annual meeting in Wilson, N. C., December 5-7, with headquarters at Hotel Cherry. An interesting program and pleasant social features have been planned. Among the speakers will be Honorable R. Grigg Cherry, Governor-elect of North Carolina, and Dr. Paul Whitaker, President of the Medical Society of the State of North Carolina. There will be a symposium on Rocky Mountain Spotted Fever, conducted by four members of the faculty of the Bowman Gray School of Medicine at Winston-Salem, and a talk on the Kenny Treatment of Poliomyelitis, illustrated by movies, which is sponsored by the Hickory Emergency Hospital. Dr. Samuel A. Thompson of New York City, a member of the Association, will present a paper on "Methods of Resuscitation".

Dr. M. A. Pittman of Wilson is president and Dr. Clarence Porter Jones of Newport News secretary of the Association.

Married.

Lt. Col. Cornelius E. Gorman, M.C., of Lynchburg and Miss Elizabeth Skender of Canton, Illinois, October 17.

Richmond Health Department.

Dr. W. Arkell Browne, formerly connected with the City Health Department before going to Alexandria several years ago to have charge of health work there, has returned to Richmond and holds the position of City Epidemiologist.

Dr. Ramon D. Garcin, Jr., has been named assistant venereal disease control officer until a full time officer can be secured for this position, until recently held by Dr. Glenn Baird.

Dr. D. Hunter Marrow,

Boydton, has left for Daytona Beach, Fla., where he will spend the winter months as has been his custom for some years.

\$34,000 in War Bonds as Prizes

For the best art works by physicians, memorializing the medical profession's "Courage and Devotion Beyond the Call of Duty" (in war and in peace).

This prize contest is open to any physician member of the American Physicians Art Association, including medical officers in the armed forces of the United States and Canada.

Full information available on request of the sponsor, Mead Johnson & Co., Evansville, Ind., U.S.A.

American College of Surgeons Expands Graduate Training Program.

In expanding its program of Graduate Training in Surgery to assure adequate opportunities for advanced training in surgery, particularly for recent medical graduates when they return from service with the armed forces, the American College of Surgeons has enlarged its headquarters staff in Chicago and announces the following new appointments effective immediately:

Major General Charles R. Reynolds (M.C., Retired), former Surgeon General of the U. S. Army, has been appointed Consultant in Graduate Training in Surgery. General Reynolds was in the Army from 1900 to 1939, was Surgeon General of the Army from 1935 to 1939, and has been Director of the tuberculosis control program of the Pennsylvania State Health Department for the past four years.

Dr. George H. Miller, formerly Dean of the Faculty of Medicine and Chairman and Professor of the Department, American University of Beirut, Lebanon, Syria, has been appointed Director of Educational Activities. Dr. Miller served in the U. S. Army Medical Corps, A.E.F., in 1918 and 1919, and was with the American University of Beirut from 1932 to 1944.

The Department of Graduate Training in Surgery is under the general direction of Dr. Malcolm T. MacEachern, Chairman of the Administrative Board, working with that Board, and responsible to the Committee on Graduate Training in Surgery, of which Dr. Dallas B. Phemister of Chicago is Chairman, and to the Board of Regents. In addition

to General Reynolds and Dr. Miller, the staff of the department consists of Dr. Paul S. Ferguson, Director of Surveys, and three assistants who conduct the surveys; and the field representatives conducting the regular Hospital Standardization surveys under the direction of Dr. E. W. Williamson, Assistant Director of the College, who assist as required in the graduate training program.

Dr. Leslie M. Bell,

Who has practiced in Winchester for several years, is now in Pasadena, California, working in a war plant hospital for the duration.

Doctors on Library Board.

Dr. Beverley R. Tucker and Dr. Ramon D. Garcin, both of Richmond, were elected chairman and vice-chairman, respectively, of the Board of the Richmond Public Library, at its meeting early in November.

Captain Hiram W. Davis,

MC., AUS., was awarded the Silver Star for gallantry in action in Normandy, France, on August 1, 1944. He is a graduate of the Medical College of Virginia in 1942 and served his internship at Stuart Circle Hospital, Richmond. Captain Davis is the son of Dr. and Mrs. Henry E. Davis of Williamsburg.

Dr. W. E. Bundy

Is now located for private practice at Oak Hill, West Virginia. He was formerly at Minden, West Virginia, having served as company physician for the New River and Pocahontas Coal Company for twenty-seven years.

Changes Name.

The Corporate name of the Richmond Hospital Association has been changed to VIRGINIA HOSPITAL SERVICE ASSOCIATION. In view of the fact that this pioneer Blue Cross Plan for Hospital Care, which started in 1935 for Richmond only, is now serving seventy (70) counties in Central Virginia, the participating hospitals, the membership and the Board of Directors felt the old name was no longer adequate.

For Sale.

One Luxor B. Alpine Lamp in good condition. Shenandoah Valley National Bank, Winchester,

Virginia. Executor of Estate of Dr. J. E. Harris, deceased. (*Adv.*)

For Sale.

Located in Virginia, the following: One Fischer Portable X-Ray, Model H, No. 4125, 65 Kv., 10 MA; shockproof, oil-immersed tube. Also, one floor model Peerless short wave, with complete electro-surgical outlets. Write D. B. Phelps, D.S.C., 602 W. Hastings, Vancouver, B.C., Canada. (*Adv.*)

Special Course Offered.

Eastern State Hospital, Williamsburg, Virginia, offers a three months In-Service Educational Program to graduate nurses. Full maintenance and a salary of \$60.00 per month plus bonus of 20 per cent is allowed for the period of training with a raise when classes are completed. Hours of duty are forty-eight per week, including classes. Applicants will be received on the first of each month beginning January 1, 1945. Apply to Superintendent of Nurses. (*Adv.*)

Obituaries

Dr. Charles Edward Conrad,

Prominent physician of Harrisonburg, died November 1, having been in ill health for sometime. He was a native of Harrisonburg and sixty-five years of age. He received his medical education at the University of Virginia from which he graduated in 1905. He was the first doctor in the Shenandoah Valley to limit his practice to pediatrics, was in 1937 chairman of the Pediatric Section of the Southern Medical Association, a past president of the Medical Association of the Valley of Virginia and also of the Virginia Pediatric Society. He had been a member of the Medical Society of Virginia since 1908 and had taken an active part in its committee work. His widow, a son and a daughter survive him.

Major Brown Hutcheson Carpenter, M.C.,

Who had practiced in Danville for four years prior to entering the Armed Services in 1942, was killed in an airplane accident on October 5, en route from Bainbridge, Ga., to Newark, N. J. The

body was found five days later near Chester Township, N. J., and was buried in Danville. Dr. Carpenter, a native of Tennessee, was thirty-three years of age, and a graduate in medicine from the University of Tennessee, Memphis, in 1936. His widow and two small children survive him.

Capt. Charles Walton Purcell, M.C.,

Well known pediatrician of Danville, lost his life in an automobile accident near Napa, California, November 11. He was en route from his home to the base hospital with which he was connected when he was instantly killed in an automobile-bus collision. Dr. Purcell was a native of Louisa and thirty-six years of age. He graduated from the University of Virginia Medical School in 1933 and, after internship and residencies at hospitals in New Jersey and New York, returned to the University of Virginia for special training in pediatrics. He practiced this specialty in Danville from 1937 to the time of entering the Army in 1942. He served as a flight surgeon in the Pacific about a year before returning to the States in December, 1943. His wife and young daughter survive him, as also a large family connection.

Dr. William James Knight,

One of the oldest physicians of Newport News in point of practice, died on November the 15th, death being due to coronary thrombosis. He was born in Gates County, N. C., in 1872, and studied medicine at the Medical College of Virginia, from which he graduated in 1897. He was considered one of the pioneer residents of Newport News and was prominent in activities of the local medical and civic organizations of that city. He had been a member of the surgical staff of Riverside Hospital since it was established in 1921, and joined the Medical Society of Virginia the year following his graduation in Medicine. Dr. Knight is survived by his wife, two daughters and several grandchildren.

Dr. Herman Luther Tutwiler.

Notice has just reached this office of the death on July 29 of Dr. Tutwiler who practiced for a time at Patterson, this State. He was seventy-one years of age and graduated from the Medical College of Virginia, Richmond, in 1900. He practiced for sometime in West Virginia and had served in that State's legislature. He had been a member of the Medical Society of Virginia for several years.

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MACROCYTIC ANEMIAS in pregnancy resemble other macrocytic anemias. This type of anemia frequently responds best to a complete anti-pernicious anemia regime, including the injection of liver extract, vitamin therapy, a diet adequate in protein, and iron by mouth when there is evidence of hypochromia.

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- (5) 3-1 cc. vials (15 U.S.P. XII units each)
- (6) 1-10 cc. vial (150 U.S.P. XII units)



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The New York Academy of Medicine

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